Burma.

LAND RECORDS ADMINISTRATION REPORT

FOR

THE YEAR ~~ENDING 30TH JUNE 1903~~.

1901-02 to 1908-09

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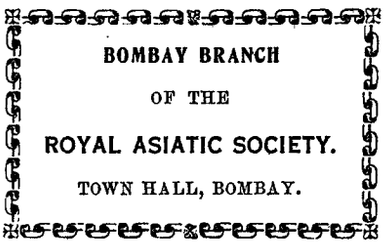

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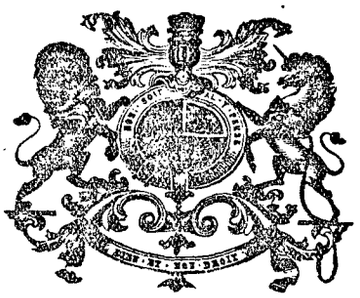

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LAND RECORDS ADMINISTRATION REPORT

FOR THE YEAR ENDING 30TH JUNE 1902.

SECTION I.

LAND RECORDS.

Demarcation preliminary to survey.

IN Thayetmyo 138 square miles were demarcated by a special staff at a cost of Rs. 494 in order to define the boundaries of villages prior to a topographical survey. The Officer in charge of No. 7 Party, Survey of India, has complained of the quality of the demarcation performed in Kyaukpyu, Sandoway and Pakôkku, saying that posts were not erected at all bends in the boundary lines, and mangrove swamp was included on demarcation in the area for survey in Lower Burma.

In the Pakôkku district a preliminary Demarcating officer completed the demarcation of the Pakôkku township (367 square miles) and an area of 511 square miles in the Myaing township was demarcated during the year ending the 30th June. From the 1st March an additional Demarcating officer was employed for 6 months in order that the work might not fall into arrears. One hundred and twenty square miles is to be surveyed in Shwebo and at the end of June one of the Demarcating officers was sent there to demarcate the *kwins* preliminary to survey.

Survey of India.

2. The area traversed by No. 7 Party amounted to 818 square miles in Pakôkku, 10 in Sandoway and 135 in Kyaukpyu, and the cadastral survey of 516 square miles in the Lower Chindwin and 110 in Sandoway was completed during the year. The actual cost during the field-season was Rs. 39,459 for the traverse and Rs. 56,526 for the cadastral survey, the recess work of both combined is estimated to cost Rs. 69,626. In the Lower Chindwin many jungle-blocks have been surveyed and it has been decided not to print the maps of these blocks until required by the extension of cultivation.

Revision survey.

3. In Hanthawaddy the revision survey of the circles of Aingkalaung, Bawlè and Myaungtanga, surveyed by local agency in 1889-91, was commenced prior to settlement. Much of this tract has but lately come under cultivation. A staff of 2 Inspectors, 2 sub-surveyors, 2 draughtsmen, and 16 cadastral surveyors, with their chainmen, traversed an area of 42 square miles at a cost of Rs. 50 per square mile, and surveyed in detail 78,561 acres of cultivation and 28,402 acres of waste at a cost of Rs. 95 per square mile. A Probationer was put in charge of the staff under the supervision of the Superintendent. The survey will be completed next year. The Assistant Director found the field-work good.

In Thôngwa also a Probationer was appointed to take charge of a staff of 2 Inspectors, 2 sub-surveyors, 2 draughtsmen, 20 field-surveyors and 107 menials under the Superintendent. An area of 76,683 acres of cultivation, with an average field area of $1\frac{1}{4}$ acres and 102,517 acres waste, in all 280 square miles in 172 *kwins*, were surveyed at a cost of Rs. 2,240 for the traverse survey of 19 *kwins* and Rs. 15,861 for the cadastral survey. The sub-surveyors also ran 12 sub-traverses and relaid old stations. The work was retarded at the commencement of the season by the fields being under water. The revision of the locally surveyed area, shortly to come under settlement, has now been completed. The Assistant Director found the field-work to be second-rate owing to the length of the offsets taken and the distances between the subsidiary lines. In the settled area, surveyed by the Survey of India, an area of 1,072 square miles in 511 *kwins* is said to require resurvey by a special staff. One-third of this area will, however, be composed of waste.

The revision survey in Myaungmya was continued with a staff of 4 Inspectors, 3 sub-surveyors 4 computors, 35 field-surveyors, 192 menials, and 1 office clerk; the staff was very slightly reduced in March. Great difficulty is said to have been met with in obtaining surveyors and chainmen. An area of 114 square miles was traversed, and sub-traverses run through 23 *kwins* at a cost of Rs. 26·12 per square mile. Twenty-four *kwins* were subdivided into 63, and an area of 307 square miles in 132 *kwins*, of which 136,409 acres were under cultivation, was re-surveyed, field-to-field, at a cost of Rs. 90 per square mile. The average size of a field was two-thirds of an acre. The Assistant Director found the field-work good and put a stop to the unnecessary survey of uncultivated waste. Mr. Purchase, a Superintendent of Land Records, was put in special charge of the revision survey in Myaungmya and Bassein. In the latter district the area referred to at the end of paragraph 14 of the Revenue Administration Report of 1900-01 was, at the instance of the District Officers, resurveyed. Work commenced three months after the opening of the field-season, but the entire area containing 21,824 acres of cultivation was re-traversed and surveyed field-to-field; 12 sub-traverses were also run. The average size of a field was very slightly less than half an acre. A newly joined Probationer assisted for a period of two months during the field-season, and the staff employed consisted of 1 Inspector, 2 sub-surveyors, 2 computors, 16 field-surveyors and 104 menials. Some difficulty was experienced in getting the staff together. The cost per square mile amounted to Rs. 31 for the traverse and Rs. 129 for the cadastral work. The quality of the field-work was found by the Assistant Director to be good.

In order to assist the operations of the Revision Settlement Officer, a resurvey of certain *kwins* in the Kyauksè district had to be taken up without much warning. Work was started on January 1st and a full staff could not be obtained before February. The estimated area for resurvey was 82 square miles with 39,680 acres of cultivation. At the end of June an area of 46 square miles, with 21,795 acres under cultivation, had been completed at an actual cost of Rs. 5,934. No traverse survey was found necessary, the staff employed was 2 Inspectors, 10 surveyors and 49 menials, and the work was hampered by sickness among them.

In all cases the Inspectors are said to have worked well, and practically all the sheets were thoroughly chacked. The Superintendents and Probationers also checked a good percentage of the work. The cost per square mile given above includes the estimated cost of the recess work. The Assistant Director gave up much of his time to directing and inspecting these surveys, and their satisfactory completion is largely due to his activity.

In Upper Burma the islands in the basin of the Irrawaddy river require an annual resurvey over a large area, and this work was carried out by the local surveyors or by a temporary staff annually appointed for the purpose.

Special surveys.

4. In Meiktila a strip of land to the east of the Samôn river had been omitted from the original survey. On the recommendation of the Settlement Officer this area was surveyed during the year. A staff of one Inspector, 6 surveyors and 26 chainmen commenced work on the 15th November and by the end of June had completed 44 square miles, of which 18,049 acres were cultivated at the cost of Rs. 5,400. The area was traversed with the plane-table and not with the theodolite. The area in Myaungmya referred to in the first section of paragraph 15 of the Revenue Administration Report of 1900-1901 was taken up during the year and completed under the supervision of the Superintendent of Land Records, Myaungmya. The traverse section of 2 sub-surveyors, 20 menials and 2 computors completed 49 *kwins* of 85 square miles at a cost of Rs. 34·8 per square mile Three main circuits, 49 *kwin* traverses and 26 sub-traverses were taken. The cadastral section consisted of 2 Inspectors, 10 surveyors and 51 menials and, as the survey was decided on only late in the year, many difficulties were experienced at the start. The Senior Inspector worked very well and the whole programme was completed. The area surveyed consisted of 9,658 acres of cultivation and 41,942 acres of waste and the cost amounted to Rs. 128 per square mile. The Deputy

Commissioner considers that the survey will tend to prevent large frauds relating to land which are said now to be coming to light. Owing to scanty population and scarcity of water the survey was difficult. The Assistant Director found the traverse calculations correct and the work in the 4 *kwins* tested, of the first class. In Henzada the demarcation and survey of Henzada town was completed at the cost of the Municipality and Tavoy town, which had been omitted from the original survey was surveyed on the 64″ scale at the cost of the Municipality under the direction of the Superintendent of Land Records. In Toungoo a special staff of 3 surveyors and 15 chainmen executed a plane-table survey of 7,753 garden-holdings with 4,467 acres under cultivation and 170 acres of waste in 4 Karen circles. The cost of the survey amounted to Rs. 1,333. The area formerly reported as under cultivation in the Thugyi's assessment roll was only 2,685 acres. The work proceeded slowly as the gardens were scattered and the tract unhealthy. The Superintendent tested the work in 8 blocks and found the work with one exception very fair. The area of gardens still remaining for survey in one circle and in part of 2 others will be dealt with by the Land Records staff in the coming field-season.

Fishery surveys.

5. In Pegu 136 fisheries were mapped during the year at a cost of Rs. 2,462. On the Director's inspection it was found that the fisheries in the cadastrally-surveyed tract had not been depicted on the 16″ sheets. In Bassein and Myaungmya special staffs were employed to carry out Major Maxwell's recommendations with regard to fisheries. Demarcation officers and clerks were sanctioned for each district and were assisted by the 3 surveyors and 9 chainmen in Bassein and the same number eventually in Myaungmya. In Bassein 291 fisheries, as subdivided, were demarcated and surveys made in 40; the entire work was completed in 4 months at a cost of Rs. 1,625. In Myaungmya 269 fisheries were demarcated and mapped at a cost of Rs. 1,857; 73 fisheries have since been surveyed. Eighty-one still require to be demarcated and surveyed. Both demarcation officers, who were promoted from Inspectors, are mentioned for their good work. The Deputy Commissioner, Katha, has pressed for a survey of the fisheries in that district. Many of them lie outside the surveyed tract, surrounded by dense jungle, and the Deupty Commissioner has now renounced his former ideas as to the survey.

Potta survey.

6. In Hanthawaddy a special staff of 32 surveyors paid at contract rates and supervised by 6 Inspectors on monthly pay, surveyed 24,283 acres in 1,540 blocks at a cost of Rs. 4,267 for the Inspecting staff and Rs. 5,886 for surveys, special attention was paid to the demarcation. In Pegu 4,000 or 5,000 *potta* applications had accumulated, and a special staff of 7 Inspectors, 35 surveyors with 4 chainmen to each surveyor and 5 chainmen to each Inspector were employed for seven months under the direction of two officers deputed to issue grants. In Nyaunglebin, out of 1,800 applications, 600 were disposed of, and only 30 to 40 *pottas* issued. The Commissioner, Pegu Division, emphasizes this as showing how necessary it is to have intelligent grant officers on whom one can depend. The vast majority were applications of speculators. In Pegu subdivision the special grant officer was changed in the middle of the season. Here the *bonâ fide* applications were more numerous. Rather under 3,000 cases are still for disposal. The conduct of the *potta* survey staff was found to be exceptionally bad. A revenue surveyor, who was acting as *potta* Inspector, was removed, and another warned and reverted. Both special grant officers, who worked at the end of the season, are mentioned by the Commissioner for the excellence of their work—Maung Shwe and Captain Langtry. He says, "No doubt progress may appear slow, but the land-grabbing schemes are very complicated, and if the money-lender and trader are to be excluded, very careful enquiry is essential." The work done by the staff is not mentioned, but after making some suggestions for the improvement of the grant system, the Deputy Commissioner adds that owing to the shuffling and hiding of papers by the Superintendent of Land Records, the question of the land available for cultivation by accretion from the Sittang could not be dealt with by him this year. This tract is at present too new for a cadastral survey.

In Tharrawddy 3 Inspectors, 11 surveyors and 30 menials were employed in the survey of 13,402 acres at a cost of Rs. 3,879. The Superintendent of Land

Records found the survey and demarcation in the charge of one Inspector bad and he was punished. The Commissioner considers the amount of the work done satisfactory, though the quality was not always good and fees were levied at a higher rate than was necessary. In Henzada 4 surveyors were employed on the survey of *pottas* at a monthly rate of Rs. 40 and survey fees were charged at 4 annas an acre. All applications except 29 were disposed of so far as survey was concerned. In Myaungmya 2 Inspectors and 12 surveyors were employed for six months on the survey of *pottas*, and both Inspectors and surveyors were paid at contract rates. Inspectors at two annas an acre, and surveyors at 6 annas an acre. Where errors were found by the Inspectors, the surveyor forfeited portion of his fee to him. The system is said to have resulted in very efficient work. An area of 9,458 acres in 526 blocks was surveyed and checked, 12 cases were not yet checked and 23 have still to be surveyed. The demarcation was specially attended to here. In each of the Thayetmyo, Amherst and Tavoy districts 2 surveyors were appointed for a short period to assist in the survey of *pottas*. In Toungoo an area of 6,322 acres in 549 *pottas* were surveyed by 22 extra surveyors at a cost of Rs. 1,930. The applications for land were most numerous in the Tantabin township whither a large number of Taungthus from the Thatôn district have migrated to take up available waste in the Bônmadi circle and also in the Ôktwin township where the waste is fertile and near the railway. The survey was delayed through faulty demarcation and heavy line-cutting. Many applications received at the close of the year cannot be dealt with till the rains are over.

In Kyaukpyu 736 acres in 100 *pottas* were surveyed. In Kyauksè apprentice surveyors surveyed 105 *pottas*, in Yamèthin 3 men, and in Myingyan 2 were employed on *potta* surveys and paid out of the fees. In all districts the inspection of the survey is left to the Supplementary Survey Inspectors and Township officers check only a few.

Area under and cost of Supplementary Survey, Statement I.

7. Statement I shows the area and assessment dealt with by the Land Records staff, and also the distribution of the subordinate staff, district by district, but the figures for Shwebo, Sagaing, Yamèthin, Lower Chindwin and Myingyan are omitted from the total for the province. In Shwebo only a small portion of the staff engaged in the assessment of water-rate is included, the rest of the staff were engaged in bringing the survey up to date, so that correct measurements might be furnished to the Settlement Officer. In Yamèthin no settlement rates were imposed, but part of the staff were engaged on the assessment of State land revenue. In the Lower Chindwin only the Mônywa township is under supplementary survey, and rates were not imposed till the *mayin* season this year. In Sagaing the staff were employed in bringing the survey and registration up to date, but the settlement rates are still under discussion. In Myingyan land revenue rates were not introduced till the *kaukgyi* season or winter harvest. As to variations in area Prome lost and Henzada gained an island of 1 square mile, Sagaing lost and Mandalay gained 3 islands, Thatôn lost 5 square miles by erosion; in Toungoo the area settled in 1899-1900 came under supplementary survey, and with this addition practically all large blocks of cultivation in Lower Burma are now under supplementary survey. In Katha the remaining surveyed portion of the district, in the Banmauk township, was holding-marked, and a Land Records staff introduced. In Meiktila 7 square miles were taken up for forest reserves.

In Lower Burma there is a slight decrease in the cost of the survey staff and of the total cost per square mile. The cost per acre shows a slight decrease as also the cost per cent. of the assessment, but the variations in the figures do not call for remark. The decrease in the cost per acre, and in the percentage cost of the revenue demand, is due to large extensions of cultivation in Pegu and the deltaic districts and to the expansion of the revenue in a favourable year. In Upper Burma the failure of the rainfall diminished the crop and the revenue, and the cost of the staff employed in assessing water-rate in Shwebo was greater than the water-rate assessed, and in Katha, where the land revenue rates are low and a large staff employed owing to the unhealthiness of the district and the scattered nature of the cultivation, the cost per cent. of the revenue is high. In Kyauksè a reduction was effected in the survey staff, and in Mandalay the employment of

a Probationer for 3 months reduced expenses. Over the whole province the cost of the supplementary survey is still only 4 per cent. of the land revenue demanded and is nearly Rs. 25 per square mile. The cost per square mile will decline when the large dry-zone districts are brought under a land records staff. At present one Inspector controls 10 surveyors over an average area of 300 square miles.

Submission of assessment-rolls.

8. In Lower Burma the assessment-rolls were generally submitted punctually before or on the date fixed. The illness of a surveyor delayed one roll 9 days in Hanthawaddy, and one 2 days in Tavoy; three rolls were late by 3 days in Tharrawaddy owing to the large extension of cultivation in 3 charges. In Henzada 5 rolls were about 2 days' late and in Toungoo, owing to the loss of 8 registers, the rolls of one circle were 2 days' late. In Upper Burma, the dates fixed for the submission of the rolls, vary with the season in each district. In Katha, a rice-growing district, the rolls were in by the 19th February; in Mandalay the dates are said to be fixed far too early for the punctual submission of the rolls, and no breathing time is allowed between the *kaing* and *mayin* assessment for the completion of the maps and registers of the previous year, and for the preliminary entries in the maps and registers for the coming year. In Shwebo the water-rate rolls were submitted on the prescribed date. In Kyauksè one surveyor, who had his rolls 15 days' late, was removed from the service. In Minbu the *kaukyin* rolls are due on the 1st September, but the first roll was not submitted till the 20th and the *kaukgyi* rolls were, owing to the heavy work involved in investigating crop failures, 15 days' late. In Meiktila nearly all the *kaukgyi* rolls were submitted by the 15th February and were all in by the 21st. In Myingyan, in this first *kaukgyi* assessment, the rolls are due on the 15th January, the field-work for that assessment was finished by the end of December and the rolls came in from the 21st January to March 12th. In both these 2 districts the *kaukgyi* revenue was practically all collected by the end of March. In the Meiktila district the difficulty of making preliminary entries in new maps and registers in time for the *mayin* assessment, the first of the following year, is said to be great. In Upper Burma generally, and more especially in the 2 last-named districts, it seems to be a physical impossibility for the Land Records staff under the present system to submit the assessment-rolls by the fixed date. In both the staff have spared neither time nor trouble to prevent any loss of revenue, and in Myingyan the Deputy Commissioner passed many of the rolls himself, and has throughout directed the operations of the Land Records staff. The Commissioner has also rendered great assistance by both proposing and adopting many means of simplifying the surveyor's work.

Offices and record-rooms.

9. In Lower Burma changes of ownership of land are registered by surveyors, in Upper Burma by headmen. In 4 districts of Lower Burma complaints are made of cultivators and owners failing to report such changes, and it is not till the field-season that such changes are detected. In order to make certain of their security, and prevent rival claims, it is customary in some districts for the money-lender to have a mortgage transaction recorded as a sale and to have his name entered in the Land Records Register No. IX as owner. The mortgagor is more than ready to adopt this method as it saves him the expenses incidental to a stamped document requiring registration, and he probably gets the loan at a lower rate of interest, so both parties represent the transaction as sale with a tacit agreement that the payment of principal and interest means the redemption of the land. Several orders have issued to prevent such misrepresentation of land transactions, but I regret to say without effect. In Myaungmya this practice was put a stop to during the year and the number of changes in ownership decreased. The cultivators trust the native money-lender and it is seldom that a *Chetty* ever takes advantage of the entry in the register. Efforts to protect the cultivator in this way are unavailing for he would sign a written contract that he sold the land just as readily as he does the entry in the bifoil register. In Upper Burma the headmen in Myingyan, Yamèthin and the Lower Chindwin are said to have done well, in Meiktila they are still imperfect, and in Kyauksè both headmen and surveyors were neglectful. In Mandalay some persons, who did not report changes, were fined. The system is

still new, but promises well, and saves the cultivator a long journey to report at the surveyors' headquarters.

The revenue surveyors' offices, and in Lower Burma the Thugyis' offices, are generally in good order and were thoroughly inspected. One of the chief defects is a neglect to maintain a file of standing orders. In Toungoo only 5 revenue surveyors have as yet got houses of their own. The houses of revenue surveyors are generally poorer than those owned by Thugyis and not so substantial, but the records are kept equally well. In Amherst the surveyors' records suffered from damp, one Thugyi in Prome, one revenue surveyor in Bassein, lost their records through accidental fires. In Myaungmya a *kwin* map of the previous year was lost by the capsizing of a boat, and in Henzada 2 *kwin* maps were lost in the post owing to the Head Clerk of a Township office failing to register them. In Minbu and Mandalay house-building advances were given to a few of the more deserving surveyors; in Mandalay they look well after their records; in Kyauksè the houses of the surveyors are poor in the charges which have recently been reorganized; in Sagaing the surveyor's charges have not yet been fixed, and in Meiktila and Myingyan they recess at headquarters. In Katha the surveyors have not yet settled down in their charges; in Minbu 2 cases, where the maps of the previous year had not been inked up, were detected. The records at headquarters are in most districts still being re-arranged in accordance with the provisions of the District Office Manual. In Myaungmya the records were not satisfactorily arranged, and the Deputy Commissioner found that instructions were not carried out. In Henzada the Deputy Commissioner found the miscellaneous files in disorder. In Mergui the new record-room is nearly completed, and the records will then be moved from their present quarters, a rented house in the town. In Shwebo the records have been moved into the new record-room; in the Lower Chindwin the records are few; in Sagaing the space provided in the rocord-room will be barely sufficient; in Minbu the racks have now been fitted up, and in Myingyan racks have not yet been erected. The Director and the Assistant Director inspected all the land record offices and record-rooms except that of Sandoway. In a large number of districts a clear record had not been properly kept of the stock of valuable instruments in the hands of surveyors and Inspectors, in some, especially in Akyab, surveyors were allowed to sign for each other in the acquittance-roll of their pay, in others cash was taken at the treasury where cash orders, payable at the township headquarters, should have been asked for, and main files of standing orders were not well kept. The offices at Thayetmyo, Prome, Myingyan, Kyauksè and Tavoy were in good order, in Henzada the office was in bad order. The staff in the offices at Pegu and the large delta districts are overworked, all means of reducing work have been considered, but an increase of establishment will be necessary. In Minbu, Myaungmya and Akyab the arrangement of the records and the registers was not perfect. In Amherst the racks were unsuitable, in Kyaukpyu and Katha good accommodation is badly needed.

Maintenance of the survey.

10. Pending assessment all the survey in Sagaing, except in part of the Sagaing township, has now been brought up to date. In Shwebo the greater part of the Land Records staff were engaged purely in revising the survey of 895 square miles and 87 square miles of extensions of cultivation. In Yamèthin also the staff were able to devote their attention to survey. In Mandalay 13 *kwins* were redrawn and fresh area statements prepared, betel-vine gardens surveyed in the 32″ scale and the annual resurvey of the islands carried out. In Katha the original survey was defective, and there are many patches of cultivation on the border of the surveyed area that will require attention. As a rule, in Upper Burma the annual changes and extensions are few and within the powers of the Land Records staff to cope with.

In Lower Burma changes and extensions are so numerous, and field and holding boundaries in new or flooded country so shifting, that the survey cannot be everywhere maintained in detail accurately by the Land Records staff and they are only able to maintain it sufficiently to frame a correct annual assessment. Considerable areas, however, have been surveyed by the regular establishment and test lines run by the Inspectors and the Superintendents. In addition to the survey of large extensions 25,338 acres in 35 *kwins* of Hanthawaddy, 15,696 acres in Tharrawaddy, 4 entire *kwins* in Prome, 28,720 acres in 212 *kwins* in Thôngwa,

30,891 acres, of which half was cultivated, in 53 *kwins* in Myaungmya, 18,842 acres in Toungoo were resurveyed. In Pegu, Thatôn and Myaungmya in thugyi's circles special surveyors were occasionally employed at the thugyi's expense. In Amherst the survey of 728 *kwins* out of a total of 880 is said to be up to date, while 30 entire *kwins* and portions of 5 *kwins* will require resurvey by a special staff. In Toungoo 116 square miles will have to be re-surveyed by a special staff. In Thayetmyo, Mergui and Tavoy the Supplementary Survey staff are able to cope with all changes. In Bassein and Henzada no revision survey is at present necessary. In Prome, despite the employment of a revision survey staff for 2 years, 49 *kwins* are still said to need resurvey, this statement is under enquiry.

Maintenance of permanent survey marks.

11. In Upper Burma, with the exception of the Yamèthin district, the permanent survey marks are said to be well protected, and are generally found with ease even if they are not protected. Four-inch maps showing the marks in their charge were issued to headmen in the Kyauksè district. In Myingyan no regular search could be made for marks, and in Shwebo the marks are not looked after as yet by the Supplementary Survey staff. In Lower Burma the protection of these marks still affords much room for improvement. In Toungoo both District Officers and village headmen have neglected them; out of 13,729 visited only 5,799 were found protected, and the losses were most numerous on the low-lands coming under cultivation. In Thôngwa one headman was fined for submitting a false report, the Inspectors visited 3,195 marks and found 1,777 protected; in Amherst out of 6,058 visited by surveyors 3,496 were protected. In Tavoy where 2 thugyis were fined, in Mergui and in Thayetmyo the marks are well protected. In Thatôn pieces of limestone rock, where available, are used to protect the marks. In Prome more attention is being paid to the preservation of the marks, a good move has been made in Henzada, where some land-holders were fined for neglecting the marks in their land.

Miscellaneous duties.

12. The 1-inch topographical map sheets in districts, where they have been received, are said to have all important changes correctly depicted on them.

A number of new grazing-grounds have also been demarcated and the demarcation of those, already reserved, partially checked. In Sagaing the grazing-grounds, proposed by the Settlement Officer, were demarcated. In Akyab out of 8 grazing-grounds allotted, 3 were demarcated and 54 cases of encroachment reported and fines inflicted; in Tharrawaddy 91 grazing-grounds were re-demarcated with new posts; in Thôngwa 13 new grazing-grounds were allotted and 10 persons fined for encroachment. In Bassein 15 new grazing-grounds were allotted and demarcated, 278 cases of encroachment reported, 204 prosecuted and 189 punished, the remainder were acquitted as the demarcation of the boundaries was held to be faulty. In Henzada the apathy of the thugyis is still extreme and the demarcation defective; it is not reported what action was taken. In Myaungmya 15 new grazing-grounds were allotted and demarcated, 9 re-demarcated and 4 re-allotted. In Amherst 3 new grazing-grounds were allotted and demarcated; the encroachments reported are few in number. In Sandoway 7 new grazing-grounds were allotted and demarcated and in Mergui 771 acres were allotted as grazing-grounds and demarcated during the year. In Toungoo 66 grazing-grounds were allotted and demarcated, and the demarcation of former years was found defective. A number of encroachments were reported in the new grazing-grounds and the offenders warned.

The checking of tax-tickets with the assessment-rolls and in Lower Burma the examination of the cattle mortality registers in the hands of village headmen form part of the duties of the inspecting staff, the latter were generally found correct. In Akyab one village headman was convicted of tampering with tax-tickets; in Tharrawaddy a follower of a circle thugyi was detected in altering the entries in tax-tickets; in Prome one headman was dismissed for the same cause, and a similar case against another headman is under enquiry. In Bassein one headman was detected by an inspector, and one by the Superintendent of Land Records in falsifying entries, and both were punished; in Henzada a similar fraud, detected by an Inspector, is under enquiry; in Tavoy one thugyi was fined Rs. 50 for cheating by

adding figures to a tax-ticket; in Minbu 2 cases of alteration of tax-tickets were reported; in Kyauksè one was reported and the headman dismissed; in Katha 5 alterations of tax-tickets were reported, and in their defence the thugyis maintained that the alterations were made by others out of spite. Minor errors were detected in Mandalay, where tenants' names had been omitted from the tickets, and in Toungoo, where headmen did not show the date of receipt of revenue on the ticket. In Bassein the thugyis paid higher rates for the copying of the tax-tickets than those sanctioned for village headmen, and were thus able to issue them quicker. In a country where title deeds to agricultural land are few, the tax-receipt is looked on by its possessor as a very strong proof of his claim to the land, so that the checking forms an important part of the work of all inspecting officers.

The Superintendent in Mandalay had a considerable portion of his time taken up with the re-settlement of revenue rates in the Shwetachaung tract. In Shwebo the staff were engaged also on mapping the areas to be taken up for the Mu canal and in surveying oil-mining grants on the 4″ scale; the Superintendent also carried out a route survey of 9 square miles for topographical purposes.

Village headmen scheme, Lower Burma.

13. Village headmen and thugyis have generally worked well, and the collection of revenue by village headmen has generally been satisfactory. In Kyaukpyu the thugyis have long been lazy and the scheme has now been adopted for that district and introduced into 2 circles. Several district schemes, notably of Thatôn, Toungoo, Amherst and Tavoy, were revised during the year. For various reasons, such as dismissal, retirement, death, or promotion of the circle thugyi, the scheme was introduced into 1 circle in Akyab, one and a half circles in Toungoo, 2 circles in Hanthawaddy, 4 in Tharrawaddy, 2 in Prome, 3 in Thôngwa, and one in Tavoy. The revision of the village headmen's charges in Henzada is still not completed.

Conduct of the Supplementary Survey staff.

14. The Superintendents who deserve special mention for the excellence of their work during the year are Messrs. Haddock, Palmer and Hardinge, and many others are named for the assistance they have given to the District officers. The Senior Superintendent is employed on settlement work. Of the 25 others one has been transferred to the Subordinate Civil Service at the end of the year, and there are also 10 Probationers, 4 of whom are in charge of Superintendent's duties, and one in a Town Lands' office. Of the Superintendents and probationers, 23 out of 36 have been less than 10 years in the department. It is therefore extremely difficult to meet the requirements of the large districts of Lower and Upper Burma and place men of experience in charge of the Land Records work. The Deputy Commissioner, Pegu, considers the Superintendent in Pegu unfit for such an important post, and the Deputy Commissioner of Henzada has found the Superintendent there lacking in experience. The system of recruitment from the Survey of India has now ceased, and the Probationers chosen locally are generally young men. For the present, therefore, until the superior staff has grown old to its duties, certain districts must suffer for lack of an experienced Superintendent. Privilege leave for short periods was granted to 9 Superintendents during the year, and owing to the increase in the number of districts under Supplementary survey 5 Probationers were appointed. One Probationer who failed to pass his examinations and whose conduct was not satisfactory, forfeited his appointment. Two of the Probationers were posted for a period of about 3 months for training with the Revenue Survey Party of the Survey of India. Permanent transfers among the Superintendents were few in number. It takes time for a Superintendent to attain control over his staff, and the experience of a Superintendent, who has been some time in one district, is a great aid to a Deputy Commissioner.

The Inspectors have generally done good work. One was appointed to officiate as a Myoôk and another was appointed to a Myoôkship without examination under recent circular orders; in Sandoway, Mergui and Toungoo one Inspector in each is said to have been inefficient; in Tharrawaddy one man is slow at his work; in Amherst the Inspectors were not sufficiently active and are said to have been wanting in discipline; in Henzada the Inspectors are said to have done better. In Minbu and Kyauksè an Inspector was reduced for bad work; in

Mandalay also one Inspector did badly; in Myingyan one of the Inspectors, who had done well, died. In Pegu the Deputy Commissioner is generally dissatified with the land records staff, and reports that the instances of bribery, corruption and inefficiency among the *potta* survey staff are numerous. One circle thugyi was removed for a case of land-jobbing, and a revenue surveyor is said to be mixed up in another case. In Tharrawaddy one revenue surveyor was removed for sending in false progress reports; in Myaungmya one thugyi's surveyor was dismissed and another removed, and a revenue surveyor called on to show cause why he should not be dismissed for incorrect entries in the assessment register.

In Minbu 2 surveyors were removed, in Kyauksè 2 dismissed; in Mandalay one was dismissed for desertion, and 3 removed for inefficiency, disobedience and falsification of reports; in Meiktila 3 resigned, one was removed, and one suspended for extortion; in Sagaing 6 resigned, 4 had their services dispensed with and 2 were removed; in Katha 3 surveyors died and there were continual changes owing to surveyors falling sick; in Myingyan 4 surveyors were turned out; in Sagaing they are said not to work well with the thugyis at present; in Meiktila they are backward in arithmetic. With the exception of Pegu, however, they appear as a body to have done well and the Deputy Commissioners of Myingyan and Thôngwa speak highly of their work.

15. The Assistant Director and myself inspected in 100 *kwins* the work of 59 surveyors under 28 Inspectors in 16 districts of Lower Burma. In Upper Burma the work of 15 surveyors under 9 Inspectors in 7 districts was tested in 23 *kwins*. Two-thirds of the work was found to be good and only 15 per cent. of poor quality. In Kyauksè one surveyor's work was disgraceful, and serious errors had crept in. The surveyors in Minbu were diffident about omitting crops that had failed from assessment; in Mergui, Kyaukpyu, Akyab and Pegu numerous errors were found in statistical information; in Thôngwa attention had not been paid to the assessment of *dhani* gardens, and in Toungoo permanent survey marks had not received attention and large extensions were found unsurveyed; in Myaungmya also extensions had not been surveyed and there were numerous statistical errors and errors in the marking of fallows; Sandoway was the only district not visited. The Assistant Director also inspected the offices of Inspectors and surveyors and generally found them in good order.

Inspection of field-work, Statement II.

The inspection work performed by District Officers shows a slight improvement, but the burden of the work falls on an energetic few, while the majority do little or no inspection. The Commissioner of the Minbu Division, Mr. Todd-Naylor, visited 10 *kwins*. He found the work well done, but noted the tendency of surveyors not to show crop failures in cases where failures should undoubtedly have been shown as they were probably afraid of being charged with slackness or dishonest partiality to the cultivators. In Myingyan Mr. Carey has taken a great nterest in the work of the Land Records staff and he checked their work in 26 *kwins*, Messrs. Stone and Thurston in Thatôn and Hanthawaddy also managed to find time from other duties to inspect 18 and 11 *kwins* respectively. In Kyauksè all the District officers did numerous and good inspections. The inspections by Subdivisional Officers have generally been of a good quality. In Mandalay they did none owing, it is said, to remission cases; in Pegu the Subdivisional Officer, Nyaunglebin, also neglected his duty, but in Akyab Maung Hla Paw Zan, in Bassein Maung Tun Lwin and Maung Ba Bwa, in Henzada Maung Tin Gyaw and in Amherst Maung Ngwe Kaing all did well, and Maung San Pe in Paungdè, Prome was very active The quality of the inspections performed by Township Officers is not uniformly good, and the Commissioners mention several who have neglected their work. In Upper Burma the period during which their inspections would be most fruitful is the six weeks preceding each harvest and the submission of the assessment-rolls. Owing, however, to the ignorance of many of the Township Officers Deputy Commissioners are unwilling to allow them to inspect sufficiently at this period for fear of interrupting the surveyor's work. There is no doubt a difficulty, but the presence of the surveyor is not an indispensable necessity, and Township Officers are only too ready to find an excuse for not inspecting the surveyor's work. Still more important is it that they should keep in touch with the

Inspectors and surveyors and realize that the land records work of survey and assessment is as much part of the administration of the township as the collection of the revenue. Maung Ko in Bassein, Maung Po Thu Daw in Henzada, Maung Myat Thin in Tavoy, Maung Chit Kaing in Meiktila, Maung Thin in Mandalay are specially mentioned for the excellence of their inspections.

In Tharrawaddy, Prome and Bassein the Superintendents of Land Records had no special or revision survey parties to supervise and they were able to do more inspection work; in Myaungmya the Superintendent was relieved of the revision survey work, and gave up more time to inspection of field-work; in Thôngwa the Superintendent had to attend to a large revision survey party; in Amherst the Superintendent was ill, and in Henzada the Superintendent neglected the field-work, and the Commissioner remarks that time devoted to re-arrangement of records and to improving the state of the office is in no way an excuse for this neglect. In this district the amount of inspection work done by the inspectors has also seriously declined and compares very unfavourably with that performed in other districts; that they were engaged in inspecting *potta* lands is scarcely sufficient to account for it. In Mandalay the settlement rates were being revised by the Land Records staff in one large tract; in Myingyan the Superintendent and the Inspectors spent much of their time in getting their raw surveyors into working order; in Kyauksè there is a general increase in the amount of inspection work. Out of a total of 27,302 *kwins* the Inspectors were able to visit 12,870 and the Superintendents 2,107. Many of those visited by the Superintendent were ones that the Inspectors had already visited. Each year about one-third of the number of *kwins* in Burma are checked by the inspecting staff. In the north of Hanthawaddy but little inspection has been done during the last three years by either the Superintendent or the two Inspectors. In Prome the Paukkaung township and a large tract to the south and east of Paungdale, and in Amherst, the Yelamaing township, and the *kwins* to east and south-east of the district have not been sufficiently inspected by the Superintendent.

Training of Civil Officers in Survey and Land Records work.

16. Eight Assistant Commissioners were under training during the year, 6 duly qualified, the report on one was not received and the other is still under training. All 6 did well in the test examination. Twenty-eight Myoôks were under training, 2 are still under training, the marks obtained by three are not reported and 20 passed the test examination with credit. All but one were able to obtain a knowledge of field-work, but few of those who go through this training have distinguished themselves so far in the inspection of field-work.

Survey schools, Statement III.

17. At the end of April 1902 the school at Kyauksè was closed, the teacher transferred to and a school opened at Pakôkku. Pupils from Kyauksè will in future attend the Meiktila school and pupils from Myingyan and Pakôkku, which is now coming under survey, will attend the school at Pakôkku. At the same time the schools at Myaungmya and Tharrawaddy and the peripatetic school in Tavoy and Mergui were abolished, and pupils from those districts will attend the schools in the neighbouring districts in the division, namely, Bassein and Thôngwa, Prome and Moulmein. In order to encourage a certain number of students from districts, in which there is no school, to attend schools in other districts, scholarships of the first grade will be more liberally allotted to them by Commissioners. In Lower Burma the number of passed students, who are still in search of employment, is increasing rapidly. Many have found temporary employment on revision surveys or special surveys, but the vacancies in the Land Records staff are few, and as passed students look solely for employment as surveyors under government, fears are expressed lest their teaching at survey schools should prevent them qualifying for other walks in life. In the case of Myaungmya, except from the Pantanaw township, but few locally-bred boys attended; in Tavoy and Mergui there are already surveyors without hopes of permanent employment, and the number of pupils in the school was small. In Tharrawaddy the Commissioner, Mr. Porter, was in doubt whether the school should be abolished. The number of pupils was up to the standard and owing to a revision survey lasting two years, a temporary demand existed for trained surveyors. The revision survey has now been completed,

and, if the Commissioner of the Pegu Division will allot scholarships to Tharrawaddy boys at the Prome school, vacancies in the Land Records staff can easily be filled up. The total number of students on the rolls on the 31st March 1902 was slightly in excess of last year, the average number on the rolls monthly shows an increase of 2 over last year. The attendance has been fairly good at all schools, and in Prome, Ma-ubin, Bassein, Henzada the number of days on which each pupil received tuition shows a satisfactory increase over last year. The boys from Thatôn were lax in their attendance at the Moulmein school. Towards the close of the term small money prizes were allotted to those who did best at the test examination. The total expenditure incurred on survey schools amounted to Rs. 42,826 and the total income amounted to Rs. 8,120; the net expenditure was, therefore, Rs. 34,706 or Rs. 63 per pupil. Only 43 pupils had passed the VII Standard Anglo-Vernacular examination, 34 in Lower Burma and 9 in Upper Burma. The entrance test in Upper Burma is an easy one, and many of the boys have to be grounded in arithmetic before they can be taught surveying. In Lower Burma the boys, when they enter, have a fair knowledge of arithmetic and do not need so long a period of tuition before appearing for the examination. In Upper Burma the large majority of the students are the sons or relatives of Thugyis; in Lower Burma the occupations of the students' parents are more varied; in Myaungmya nearly all the boys were sons of village traders; in Tharrawaddy and Prome only one-third were the sons of agriculturists; in Ma-ubin only one-quarter, while in the Toungoo school nearly all are said to be the sons of agriculturists. Three hundred and ninteen pupils passed the examination in surveying, but the numbers who succeed in passing the examination in arithmetic and revenue law are much less though a considerable improvement on last year's results. The examination in revenue law is confined to questions concerning the duties of a thugyi, very few passed students are now appointed thugyis, and the examination might, with advantage, be confined to the duties of a revenue surveyor. Minbu, Myaungmya, Bassein, Pegu and Insein did well in the examination. In Upper Burma the number of students, who could appear for the examination, were much less than the number on the rolls. The Mandalay school did fairly well and the Katha school was unfortunate. The scholarships for pupils from Bhamo and Myitkyina have now been transferred from Mandalay to the Katha school, and it is hoped that both the attendance and the number of passes will show an increase. The "Clancey" medal was won by a student of the Prome school. A large number of the students, who pass their examination, undergo a training with the Land Records staff for 6 to 9 months before they are qualified for surveyorships. Complaints are made of some of them leaving before their period of training is completed, some get appointments in other departments, and others in Upper Burma succeed their father as thugyi of a village. In districts like Katha, as soon as a boy passes, he has to be given an appointment for want of trained hands. In Myaungmya the Deputy Commissioner considers that the boys were kept under training too long. The Deputy Commissioner of Meiktila inspected the survey school there. All the survey schools were inspected by the Assistant Director or myself, but in 6 the out-door work could not be examined as the work was not advanced enough or the rain prevented it. In Myaungmya and Meiktila the Superintendent of Land Records had not taken sufficient interest in the school. In Toungoo and Insein drawing and plotting had been neglected. In Ma-ubin and Tharrawaddy the entries in the field books were defective. In the Upper Burma schools the pupils were generally found backward in arithmetic. This is the result of the lower test examination for entrance. The Survey School Teachers have all done well, and the work of the teacher at Prome has improved. The teacher at Meiktila has received an officiating appointment as a Myoôk.

SECTION II.

Agriculture.

Collection of Economic Products.

18. The collection of economic products from all parts of the province and of information concerning them adds considerably to the work of the office. Some good botanical

specimens of the *Aleuriles Moluccana* (the candle-nut tree) and *A. Cordata* (Tung oil or Chinese wood oil tree) were procured from the Southern Shan States. Several specimens of the *Andropogon Sorghum* (Juar or Pyaung) were previously sent, and as the matter was under special investigation by the Reporter, at his desire further supplies were forwarded of different varieties of the product from Yamèthin and Henzada. A number of species of *Crustacea* were forwarded from Hanthawaddy, Myaungmya and Bassein. A number of varieties, both tubers and plants, of the edible and non-edible kinds, cultivated and wild, of the *Dioscorea* yams were procured from Northern Arakan, Thôngwa, Myitkyina, Thatôn and the Northern and Southern Shan States. Botanical specimens of a wild species of *Oryza* (Burmese *Natsaba*) were obtained from Mergui. This is described by the Reporter as almost certainly *O. Latifolia*. From Prome was procured a specimen of a fibrous species of sedge, *Cypherus Corymbosus*, called in Burmese '*Wet-myè-u*.' Rangoon, Mandalay and Sagaing sent specimens of the *Cucurbita Maxima*, Thatôn of *Chrysophyllum Roxburghii*, Rangoon of sulphate of copper. From Twantè further information and specimens were forwarded regarding the *Sideroxylon grandifolium*. The Conservator of Forests continued the enquiry regarding the *chaulmugra* (*Kalaw*, Burmese) and as a result Dr. Watt has discovered that Burmese chaulmugra is a hitherto unknown variety, and the enquiry tends to elucidate the distinction between other allied varieties. In Myitkyina and Bhamo specimens of those trees, from whose fibre paper is manufactured, continued to be sent, and His Britannic Majesty's Consul at Têngyüeh kindly supplied information regarding the Chinese manufacture of paper from fibre and the trade in it. The Kachin name for the different trees sounds very much the same, *Tatphun*, and specimens of both the *Edgeworthia Gardneri*, and the *Broussonetia papyrifera* have been sent as used for the manufacture of paper.

Provincial Art Handicraft competition.

19. Under the direction of Mr. H. L. Tilly, Chief Collector of Customs, a second exhibition, since the revival of the Art competitions, was held in Jubilee Hall, Rangoon, on the 17th and 18th January. In the classes for silk-weaving, gilt lacquer, *kalaga* and pottery there was no competition, and the exhibits of ivory, lacquer and glass mosaic work were poor. The lack of interest shown by some Municipalities and Deputy Commissioners was the chief reason for failure in these classes. Of the wood-carving Mr. Tilly writes "although there was much excellent work in the details of the wood-carving, even the best designs were not carefully thought out, the artists seem to have no sense of balance or propriety in composition. They are more concerned to display wonderful expertness in execution than skilful harmonious design." The exhibition of bronze statuettes was encouraging, and the artists particularly happy in their conception of fantastic attitudes. The silver work generally was of a high standard of excellence and the competition very keen.

Agricultural shows.

20. During the year shows were held at Kyônpyaw, Bassein district, on the 27th and 28th of January, at Sagu, Minbu on the 25th and 26th March, and at Letpadan, Tharrawaddy on the 4th and 5th March 1902. Rupees 1,000 were sanctioned by the Government of India to be spent as prizes to *bonâ fide* agriculturists within the different divisions for the encouragement of cattle breeding. Of this amount Rs. 285, 300, and 355 were allotted to the three shows in order, and Rs. 215, 160, 155 only were distributed in prizes. As might be expected Burman cultivators did not produce milch cows and cows with calves at heel, worthy of receiving a prize. The amounts allotted under these heads will be raised this coming season. In the buffalo class the entries were few but good, and in "bull oxen," the entries were poor in Minbu, fair in Letpadan and good in Kyônpyaw. An account of the Kyônpyaw show, with an explanatory note, has already been published in the *Burma Gazette*. The shows will be held at the same place about the same date every year, the prizes are to be of sufficiently high value to secure good exhibits, and the interest and co-operation of Native gentlemen and agriculturists are desired in their management. The Bassein rice firms have very generously given their aid at Kyônpyaw and the excellent prizes for market and seed paddy, offered by them, contributed largely to the success of the show.

The cost to Government of the three shows amounted to Rs. 1,328-10-0 at Kyônpyaw (of which Rs. 1,277 were distributed in prizes), Rs. 744 at Sagu, Rs. 705 at Letpadan. At all three places the "plough oxen" were undoubtedly the best and the chief feature. In the pony classes the entries were fair in Minbu and Kyônpyaw, but poor at Tharrawaddy. The exhibits of grain at Kyônpyaw were very good, but few at the other two centres. The Commissioners, Pegu and Minbu, were present at the Letpadan and Sagu shows, Veterinary Captain Evans and myself attended the Kyônpyaw and Letpadan shows, and the Settlement Commissioner and Colonel Reilly, A.V.D., gave great assistance in judging the exhibits at Kyônpyaw. The shows have now become known to the cultivators, and the attendance, with earlier notices, will probably be much larger in 1903. Great assistance was given at all the shows by the Burman officials, especially those in the Ngathaingyaung and Henzada subdivisions.

21. The reports on the state of the experimental gardens maintained by Government will be found in Appendix II to this report. The Deputy Commissioner of Bhamo, Major Cronin, condemns the Sinlumkaba garden in very strong terms, saying that owing to its position, restricted area, want of water, unsuitable climate, cost of carriage, and distance from any large market with a steady demand for fruit it is doomed to failure. He contends that the Kachins will not take to fruit culture or potato-growing. He advises that the trees be moved down to Bhamo, the expenditure curtailed and the saving spent on improving the breeding of pigs and ponies. The Commissioner of the Mandalay Division considers that this pessimistic view is hardly justified by a perusal of the report and recommends that the experiment be continued. The report on Katha garden is the first submitted, the area taken up is very small. The gardens at Falam and Myitkyina have not been so successful. Mr. Hildebrand, Superintendent, Southern Shan States, who has been many years in charge of the Taunggyi garden, retired this year.

Experimental gardens, Statement IV.

22. One Sibpur and three Meston ploughs were obtained from the Director of Land Records and Agriculture, United Provinces of Agra and Oudh. In Bassein the Sibpur plough was found more suitable than the Meston plough for paddy-land. The other two ploughs were sent to Meiktila, one broke and the last has not been reported on. A seed-drill was received from the Board of Revenue, Madras, in April, but was stowed away in the office and lost sight of. In August it was despatched to the Deputy Commissioner, Magwe, too late to obtain a report on its working.

Agricultural implements.

23. *Tobacco seed.*—Twelve pounds of Havana and 12 of Virginia tobacco seed were obtained from Messrs. Landreth and Company, Philadelphia, in February and distributed in July; the Havana seed mostly in Lower Burma, 5 lbs. alone being sent to Thatôn, and the Virginia in Upper Burma. In Tavoy the experiment was a moderate success in one out of 4 cases; in Amherst the seed did well in the Moulmein township on alluvial soil; in Thatôn and Akyab the seed did not germinate; in Pakôkku floods killed the seedlings; in the Lower Chindwin and Shwebo last year's drought ruined the experiment. At Baingbin, in Myitkyina, a good crop was obtained. In Thôngwa both the Havana and Virginia seeds gave good results, but the Virginia tobacco has too small a leaf with too fine a texture to be appreciated by the cultivators. The seedlings, from one pound of Virginia seed covered 6·75 acres were transplanted in November, and a crop of 250 lbs. obtained in April. The Havana seed, 2 lbs., is said to have produced an outturn of leaf over 8,213 lbs. valued at Rs. 50 to Rs. 60 per 365 lbs. Some acclimatized seed is being sent to Minbu for experiment. Considerable damage was done by the cyclone in May to the tobacco and the curing sheds at Yandoon.

24. *Ground-nut.*—Thirty-five bags of ground-nut seed were obtained from Messrs. Gallios Mountbrun and Company, Pondicherry, and distributed to various districts in May 1901. In Shwebo, Yamèthin, Pakôkku and Thayetmyo the seed failed to germinate owing to drought. In Myitkyina the experiment was for the first time successful; 14 lbs. of seed were sown in July and 280 lbs. of nuts dug up in December, but the experiment was a failure in other plots. In Minbu the seed was tried in 4 villages; in Sagu 54 lbs. of seed planted in July gave only 180 lbs. of nuts in February; in the other three experiments the seed was sown in September

and in 2 cases the outturn was fairly good. In Sagaing the experiment was a failure owing to a heavy downpour of rain or to want of rain. The Deputy Commissioner casts doubts on the wisdom of asking cultivators, who have little labour or land to spare for exepriment, to sow imported seed at their own risk. In Kyauksè the seed was given out to four cultivators in Dayegaung. The first sowings which, promised well, were washed out by floods, but a second sowing gave a fair crop in April. The local ground-nut is not usually sown before September. In Mandalay, out of 4 experiments, the one at Pyintha was successful. In Toungoo the seeds do not seem to have been carefully looked after. In Katha the experiment failed from want of care. In Amherst the experiment failed, with a heavy rain fall the time of planting was probably too early. In Myingyan cultivators are anxious to obtain all the seed they can get.

25. *Vegetable seeds.*—Vegetable seeds from Messrs. Sutton and Sons and from the Government Botanical Gardens, United Provinces of Agra and Oudh were distributed. The results varied very much according to the season and the care be stowed on the cultivation. In Shwebo drought killed theyoung plants; in Bhamo they were not well looked after; in Sagaing inundation or want of rain ruined 17 out of 21 experiments; in Meiktila onions, radish and turnip did badly, the beans and peas succeeded as they were sown in beds manured with old lime and well-decomposed cattle dung; in the Northern Shan States, except during the rains, vegetables have done well. Tomato seed was specially distributed among the Shans, and they are said to show a preference for the improved varieties. Sugar beet, which was tried some years ago, was again tried this year. Except in the Northern Shan States, where it was eaten as a vegetable, the crop failed. No attempt to manufacture sugar was made, and the beet formerly obtained was found to be wanting in saccarine matter. There is no doubt that it can be grown with good cultivation in the Shan States. The experiments in the cultivation of vegetables in the Pakôkku Chin Hills are reported to have had fair success. The Superintendent mentions that the experiments are exciting the curiosity of the Chins several of whom have asked for seed. Seed of improved varieties of musk and water melon were obtained from India and distributed; so far, except in Yamèthin, no success has been met with.

26. *Paspalum dilatatum.*—A small quantity of seed obtained from the Superintendent, Royal Botanic Gardens, Calcutta, was experimented with in Meiktila without success. A further supply of 30 lbs. obtained from Messrs. Anderson and Company of Sydney was distributed to Meiktila, Minbu, Pakôkku, Shwebo, Yamèthin, Myingyan, Magwe, Lower Chindwin and Mandalay in March. The experiments generally failed; the seeds in many places did not germinate and in others the plants withered, while still very young. In Pakôkku Jail it grew well with slight irrigation and is said to resemble an indigenous grass known to the Burmans as 'Légwamyet.' In the Sidôktaya valley, Minbu, a local headman personally conducted the experiment successfully. The general impression is, however, that in this country it needs water and is not drought resisting. The Deputy Commissioner, Mandalay, has not yet reported. A further supply obtained from Australia was distributed, 20 lbs. to the Deputy Commissioner, Mandalay, 3 lbs. to the Chief Supply Transport Officer, Deesa, and 2 lbs. to the Deputy Commissioner, Pakôkku. An experiment is also being conducted in Rangoon and Mandalay on the respective germinating power of seed packed in bags, and seed packed in zinc-lined cases.

27. *Australian salt-bush.*—Five pounds of *Atriplex Nummularia* and 5 lbs. of *Atriplex Semibaccata* were distributed in the dry zone districts for experiment. In nearly all cases the experiment was a failure and the seed did not germinate. Fodder crops are not very largely grown in Burma, except jowar, and it is probable that if we had agency for collecting the seed, indigenous grasses would do better than those imported. At present, however, there is not sufficient demand in Burma to make it worth the trouble of collection.

28. *Egyptian cotton seed.*—Twenty pounds of seed were obtained from the Commissioner of Settlements and Agriculture, Central Provinces, and distributed in October, together with a copy of Bulletin No. 3 of 1901, issued by the Land Records and Agricultural Department of the Central Provinces, to the districts of

Myingyan, Mandalay, Sagaing, Lower Chindwin and Meiktila. A further supply of three pounds was obtained in December through the Reporter on Economic Products and sent to the Commissioner, Minbu Division, for trial. No report of any success has been yet received. In the Lower Chindwin insects killed the young plants, in Sagaing the plants started well, but failed to come into bloom.

29. *Plantains.*—From the Madaya gardens of the Mandalay district 500 shoots of the 'Nanthabu' plantain were forwarded for experiment in Minbu. The plants obtained from these shoots are reported to be doing well, but in 2 out of the 6 villages to which the plants were distributed they were destroyed by floods from the Môn river. The trees that exist will not bear fruit till next year. They are said to be in good condition.

30. *Potato.*—Experiments were tried in the cultivation of potato from seed locally obtained in the Upper Chindwin district, but all failed, attributable, it is said, to the seeds having been damaged in transit. From Kumaon 9 maunds of selected seeds of the Kidney variety were procured, of which 8 maunds were forwarded to the Chin Hills (Bengal) and 1 maund to Pakôkku (Mindat) for experimental cultivation, but reports from these centres have not yet arrived.

31. *Tea.*—From Kurseong (Bengal) 1 maund and 13 lbs. and from Ceylon 5 lbs. of good indigenous tea-seed were procured, and also 5 lbs. of each of three other selected varieties from the former place. The seed was distributed for experimental cultivation in Bhamo and Katha, the Northern and Southern Shan States, and Hsipaw State. The Adviser to the Hsipaw *Sawbwa* states that the seed which was given out in all the tea-growing tracts of the State had germinated and the plants were growing well. From Bhamo no report is likely to be yet received, the seed was distributed to Kachin's Chiefs. In Katha, with the exception of a few seeds in the experimental garden, no success was obtained.

32. *Para-rubber.*—A large quantity of para rubber seeds (5,000) were obtained from Calcutta and sent to the Agri-Horticultural Society of Moulmein for experiment in the Amherst and Thatôn districts where several persons were said to be anxious to cultivate the tree. Reports on the progress of the experiment, in due course, have been promised. In the Northern Shan States Mr. Hillier was supplied with rubber-yielding plants. Para-rubber failed, but Ceara grew in the rains to the height of 6 or 7 feet and, though checked in the dry weather, is likely to do well.

33. *Sisal hemp.*—A supply of bulbils (400) of the Sisal plant was procured from South Sylhet (Assam) and planted out in the grounds of the Agri-Horticultural Society of Rangoon. As the bulbils arrived in poor condition it was feared that they would fail, but half grew well, and have since been distributed to the Toungoo, Pegu, Tavoy and Thôngwa districts.

China Grass (Rhea). A small supply of plants of the China Grass was obtained from the Straits Settlement and experimented with in the Toungoo district. The experiment is reported to have been fully successful and samples of the fibre extracted from the plants have been forwarded to the Reporter on Economic Products to be valued and the quality of the fibre reported on.

34. *Manila hemp.*—Some seed of Manila hemp was sent to the Northern Shan States for experiment by Mr. Hillier and is reported to be flourishing.

35. *Jute.*—Sixty pounds of jute seed were obtained from the Director of Land Records and Agriculture of Bengal and experimented with in the districts of Henzada, Tharrawaddy and Thôngwa. All the experiments, however, proved failures. In Henzada, where the seed was sown in low paddy-land, most of the plants perished from the heavy rains. The plants that survived yielded about 4 maunds of fibre only. In Tharrawaddy the plants died while quite young. In Thôngwa in only one case did the plants grow at all well, here they reached about 6 feet in height, but were not robust and the fibre was of very poor quality being in short lengths owing to the plants having numerous branchlets. In the local jail jute has for some years past been successfully grown, the plants reaching a height of from 9 to 11 feet with but few and small branchlets. The Burman cultivators prefers the cultivation of paddy to that of jute.

36. *Wheat.*—Five baskets of seed were obtained from Sagaing district, and experimented with in Magwe, 4 failed owing to late sowing and the other gave

a crop of 34⅛ baskets. On cleaning this produced only 9⅛ baskets. The Deputy Commissioner considers the crop unsuited to the district.

37. *Sessamum.*—Eight baskets of sessamum seed were obtained from the Magwe district for experiment on the grounds of a Mission school in Amherst. The experiment has not yet been completed.

38. *Jerusalem artichoke.*—Forty-eight pounds of tubers of Jerusalem artichoke were obtained from the Saharanpur garden in February 1901 and were sent to the Deputy Commissioner, Katha, at his request. The tubers were distributed to cultivators, but no success was obtained.

39. *Paddy.*—The Deputy Commissioner, Tharrawaddy, has experimented with an indigenous variety of paddy, called *daiksaba,* growing wild in the delta districts. The experiment which was intended to encourage the cultivation of lands too water-logged for other varieties to succeed was a failure in 7 out of 10 trials. A similar variety of paddy called *Pago-Shwe Hmat* was sent by him for valuation, and also specimens were sent to the Reporter on Economic Products for identification with Indian varieties; the grain was valued by one of the principal rice-milling firms at the same price as *ngakyouk,* but was said to be unsuitable for export to Europe. The *daiksaba* was said to be very inferior.

A supply of 5 maunds each of 2 varieties of paddy called *dhempu* and *barum aram,* which are grown respectively in the Bograh district and Rajsahye division in Bengal has been distributed, the first in Hanthawaddy and Tharrawaddy, and the second in Toungoo and Pegu for experiment on water-logged lands in the coming year.

Miscellaneous.

40. Under recent orders considerable change has been effected in the reports and returns. The publication of provincial statistics regarding crops, land transfers, etc., has been discontinued, and it has not yet been decided in what form, if any, the annual record of these statistics shall be preserved. The report on rainfall registration has now been confined solely to the condition of the guages and the registration. The annual crop measurement statistics are prepared as before, but are no longer printed and published. Certain progress reports have been discontinued. The work in the district offices, despite the reduction in the number of statements, appears to grow no less, and the district reports on the land records have been very fully written.

The preparation of the famine analyses was deferred a year, pending the enquiry into the food production and consumption, the completion of the census, and the receipt of orders on the draft Burma Famine Code. With regard to the estimate of food consumption, the Assistant Director conducted enquiries in 13 districts in Lower Burma and in 3 in Upper Burma.

The weekly crop reports from each district, the fortnightly statement of retail and wholesale prices, and the monthly statement of the daily rainfall at each station were regularly published. The rice and cotton crop forecasts were also compiled and published on the due dates.

CAMP PAKÔKKU:
The 5th August 1902.

A. GAITSKELL,
Director of Land Records and Agriculture, Burma.

[The maximum limit of the Appendices is 13 pages.]

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APPENDIX I.

STATEMENT No. I.—*Area under and cost of Supplementary Survey for the year 1901-02* (para. 7).

District.	Total area.				Total assessment (including cess in Lower Burma) on the area in column 5.	Number of Inspectors.	Number of Surveyors.	Total cost per square mile (column 2)			Per acre of the area in column 3.	Per cent. of the assessment in column 6.
	Total, in square miles.	Under occupation.	Under cultivation.	Under assessment.				Of Superintendence.	Of Survey staff.	Of combined total.		
1	2	3	4	5	6	7	8	9	10	11	12	13
	Sq. m.	ACRES.	ACRES.	ACRES.	Rs.			Rs.	Rs.	Rs.	As.	Rs.
Akyab ...	1,921	596,908	525,350	583,650	11,98,520	5	72	8·25	18·23	26·48	1·364	4·25
Kyaukpyu ...	686	105,549	101,039	102,443	1,84,011	3	34	14·23	9·40	23·63	2·458	8·81
Sandoway ...	148	36,474	33,963	35,760	72,346	2	10	52·85	29·53	82·38	5·349	16·85
Hanthawaddy ...	2,630	1,126,356	1,084,971	1,116,266	35,89,212	7	97	8·53	21·13	29·66	1·108	2·17
Pegu	2,164	729,528	713,017	729,528	18,61,843	5	57	5·59	13·18	18·77	0·891	2·18
Tharrawaddy ...	1,159	429,518	413,832	425,637	9,04,133	4	49	9·30	10·49	19·79	0·854	2·54
Prome ...	1,724	327,380	310,458	327,177	3,97,248	4	47	7·55	12·85	20·40	1·718	8·85
Thôngwa ...	2,491	913,650	859,563	904,372	22,66,691	9	87	8·63	17·49	26·12	1·140	2·87
Bassein ...	2,223	592,605	536,971	585,798	14,20,290	7	69	8·29	16·75	25·04	1·503	3·92
Henzada ...	1,787	503,351	489,789	500,819	11,85,853	6	62	7·18	15·74	22·92	1·302	3·45
Myaungmya ...	2,063	530,727	482,927	518,118	11,55,071	5	54	6·23	12·36	18·59	1·155	3·32
Thayetmyo ...	577	89,334	75,823	89,002	98,094	2	20	12·79	15·34	28·13	2·907	16·55
Toungoo ...	1,497	260,413	245,794	251,057	5,99,475	4	38	7·20	8·12	15·32	1·408	3·83
Thatôn ...	2,272	560,828	544,569	558,398	12,04,454	6	65	8·55	14·17	22·72	1·473	4·29
Amherst ...	1,298	325,705	309,566	322,947	6,94,619	5	38	9·62	12·90	22·52	1·435	4·29
Tavoy ...	434	107,063	97,041	104,951	2,12,680	2	19	18·97	15·77	34·74	2·253	7·09
Mergui ...	577	79,995	72,018	78,640	1,57,073	3	17	14·72	12·55	27·27	3·147	10·02
Minbu ...	1,418	368,759	234,213	234,213	3,74,685	5	46	7·87	11·77	19·64	1·209	7·44
Mandalay ...	691	213,555	127,889	116,440	3,36,967	5	45	19·69	26·98	46·67	2·146	9·57
Pyinmana ...	824	147,313	117,092	116,065	1,34,708	5	34	11 18	20·45	31·63	2·830	19·35
*Shwebo** ...	*35*	*22,327*	*16,052*	*8,709*	*11,154*	*2*	*16*	*155·43*	*212·63*	*368·06*	*9·232*	*115·49*
*Sagaing** ...	*1,857*	*701,476*	*445,568*	...	...	*6*	*60*	*7·37*	*12·17*	*19·54*	*0·828*	...
Kyauksè ...	564	235,160	155,757	156,760	5,90,113	6	48	20·14	34·52	54·66	2·097	5·22
Meiktila ...	1,572	578,545	299,210	261,605	3,83,114	5	50	10·06	11·40	21·46	0·933	8·81
*Yamèthin** ...	*1,776*	*361,176*	*237,848*	...	...	*5*	*52*	*5·37*	*11·22*	*16·59*	*1·305*	...
*Myingyan** ...	*3,001*	*1,084,058*	*645,841*	*561,948*	*4,40,661*	*8*	*70*	*6·67*	*7·99*	*14·66*	*0·649*	...
*Lower Chindwin**	*452*	*167,715*	*127,090*	...	...	*1*	*10*	*2·54*	*1·91*	*4·45*	*0·192*	...
Total for 1901-02...	30,720	8,858,716	7,830,852	8,119,646	1,90,21,200	105	1,058	9·29	15·44	24·73	1·368	3·98
Total for 1900-01...	29,870	8,452,202	7,534,892	7,802,588	1,80,94,165	102	1,030	9·44	15·53	24·97	1·441	4·12

* Under settlement.

STATEMENT NO. II.—*Supplementary Survey Inspections for the year 1901-02* (para. 15).

District.	Total number of *kwins* in tract.	NUMBER OF *KWINS* IN WHICH THE FIELD WORK WAS TESTED.												
		By Land Records Staff.					By District Officers.							
			Inspectors.					*Subdivisional Officers.*			*Township Officers.*			
		Superintendent.	Number of Inspectors.	Number of *kwins* checked.	Average.	Total.	Deputy Commissioners.	Number of Subdivisional Officers.	Number of *kwins* checked.	Average.	Number of Township Officers.	Number of *kwins* checked.	Average.	Total.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Akyab	1,103	106	5	684	137	790	5	3	37	12	8	73	9	115
Kyaukpyu	547	78	3	256	85	336	4	...	...	...	5	24	5	28
Sandoway	192	80	2	173	87	180	...	...	...	...	3	24	8	24
Hanthawaddy ...	2,795	72	7	841	120	892	11	3	48	16	7	90	13	149
Pegu	1,110	69	5	509	102	578	...	2	34	17	5	65	13	99
Tharrawaddy ...	542	98	4	435	109	481	1	2	15	7	5	55	11	68
Prome	1,013	122	4	691	173	712	6	3	52	17	7	80	11	127
Thôngwa	1,098	35	9	639	71	674	8	3	21	7	7	42	6	71
Bassein	1,267	90	7	712	102	728	6	2	28	14	7	105	15	139
Henzada	849	58	6	405	67	414	4	2	45	22	6	93	15	142
Myaungmya ...	996	72	5	376	75	390	4	2	21	10	4	27	7	52
Thayetmyo	377	112	2	297	148	298	4	2	36	18	4	52	13	92
Toungoo	762	90	4	367	92	395	2	2	5	2	6	23	4	30
Thatôn	1,397	101	6	506	84	560	18	3	18	6	6	34	6	70
Amherst	880	44	5	453	91	472	7	3	33	11	7	53	8	93
Tavoy	424	63	2	156	78	196	6	...	...	...	4	26	6	29
Mergui	631	65	3	151	50	189	2	2	5	3	4	26	6	33
Minbu	837	66	5	538	108	543	2	2	28	14	5	40	8	24
Mandalay	630	87	5	486	97	363	...	2	...	...	4	35	9	20
Katha	1,269	79	5	525	105	604	5	3	15	5	7	28	4	43
Shwebo*	183	139	2	96	48	150	13	3	...	...	8	19	2	32
Sagaing*	1,210	71	6	460	77	465	...	3	25	8	7	51	7	76
Kyauksè	604	61	6	826	138	887	8	2	45	22	3	53	18	106
Meiktila	1,910	80	5	673	135	723	8	2	11	5	4	20	5	39
Yamèthin*	1,881	93	5	522	104	541	...	2	5	2	6	31	5	36
Myingyan*	2,795	76	8	1,093	137	883	27	2	16	8	6	54	9	97
Total for 1901-02 ...	27,302	2,107	126	12,870	102	13,444	151	55	543	10	145	1,223	8	1,834
Total for 1900-01 ...	25,431	1,936	125	11,925	95	12,866	128	50	385	8	133	878	7	1,344

* Under settlement.

STATEMENT NO. III.—*Statistics relating to Government Survey Schools for the year 1901-02* (para. 17).

Station in which school is established.	Average number of pupils on the rolls in each month.	Number of days the school was in session.	Average number of days each pupil received tuition.	Number of pupils on the rolls on the 31st March.			Total income.	Expenditure.					Number of pupils who passed the last examination in		
				Pupils paying fees.	Free pupils.	Total.		On establishment.	On scholarships.	On prizes.	On other contingencies.	Total.	Surveying.	Arithmetic.	Revenue law.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
							Rs.	Rs.	Rs.	Rs.	Rs.	Rs.			
Akyab	35	270	246	38	...	38	425	1,104	480	24	327	1,935	18	9	7
Kyaukpyu ...	23	266	225	16	6	22	210	1,104	800	14	250	2,168	6	4	3
Insein	35	281	252	44	...	44	850	1,104	600	30	622	2,356	26	4	9
Pegu	40	261	223	44	...	44	956	1,194	870	30	4	2,098	30	12	5
Tharrawaddy ...	25	277	256	25	1	26	621	962	463	20	88	1,533	18	9	9
Prome	21	275	249	12	12	24	265	1,104	459	16	369	1,948	14	10	11
Ma-ubin	24	277	249	24	...	24	586	1,044	715	16	299	2,074	11	7	3
Bassein	30	254	241	27	6	33	586	1,128	714	22	603	2,467	24	7	1
Henzada	22	280	253	22	1	23	514	1,104	528	16	5	1,653	16	11	9
Myaungmya ...	13	278	268	13	...	13	311	1,104	540	10	409	2,063	12	6	5
Toungoo	26	250	196	14	2	16	608	1,140	410	18	367	1,935	10	3	2
Moulmein,... ...	26	244	113	20	..	20	592	774	1,097	16	122	2,009	12	9	8
Mergui	9	250	241	11	6	17	140	1,104	400	8	508	2,020	6	6	2
Minbu	45	252	213	30	15	45	398	1,138	1,418	44	530	3,130	40	2	18
Mandalay... ...	30	271	236	22	6	28	165	1,104	1,112	30	103	2,349	13	2	3
Katha	19	267	180	6	12	18	134	816	270	20	146	1,252	4	...	...
Sagaing	33	253	256	20	7	27	463	1,104	819	32	233	2,188	11	4	4
Mônywa	22	238	221	7	17	24	82	949	537	26	194	1,706	6	1	3
Kyauksè	17	274	241	...	17	17	6	1,104	741	20	105	1,970	13	4	6
Meiktila	30	271	228	7	20	27	88	1,104	1,156	32	5	2,297	16	5	10
Yamèthin	28	271	220	10	18	28	120	1,104	441	36	94	1,675	13	2	1
Total for 1901-02 ...	26	265	229	412	146	558	8,120	22,393	14,570	480	5,383	42,826	319	117	119
Total for 1900-01 ...	24	261	240	404	134	538	7,161	22,407	15,198	476	6,295	44,376	296	93	58

STATEMENT NO. IV—*Receipts and Expenditure of Experimental cultivation during 1901-02* (para. 21).

No.	Station.	Budget allotment.	Receipts from sale of produce.	Expenditure. Establishment.	Purchase of seeds.	Purchase of agricultural implements.	Up keep of garden.	Feed and keep of stock.	Miscellaneous contingencies.	Total.	Remarks.
1	2	3	4	5	6	6a	7	8	9	10	11
		Rs.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
1	Chin Hills (Falam).	1,250	251 8 6	540 0 0	200 0 0	.....	200 0 0 *140 0 0	.....	124 11 6	1,204 11 6	*Fencing and trenching.
2	Katha ...	2,500	3 5 0	484 10 7	304 12 3	.....	282 14 0 *539 5 0	.....	882 9 5	2,494 3 3	†Myitkyina garden Rs. A. P. 904 8 7 Sima ... 275 8 9 Sadôn ... 149 1 1 1,329 2 8
3	Myitkyina (*a*).	975	.....	.....	.....	.....	.....	.....	.....	†1,329 2 8	
4	Southern Shan States (Taunggyi).	2,419	2,750 8 3	1,924 4 0	466 2 0	.....	262 3 0	.....	110 4 0	2,762 13 0	
5	Bhamo (Sinlumkaba).	2,820	35 5 9	1,211 8 0	160 2 5	.....	564 2 0	10 12 0	255 14 0	2,202 6 5	
6	Distribution from Headquarters.	4,500	.....	.....	1,577 6 5	.....	.....	.....	55 10 0	1,633 0 5	
	Do. ...	2,000	.....	.....	.....	626 1 6	.....	.....	6 12 0	632 13 6	
	Total Rs. ...	16,464	3,040 11 6	4,160 6 7	2,708 7 1	626 1 6	1,988 8 0	10 12 0	1,435 12 11	‡12,259 2 9	

‡ Totals of columns 5, 6, 6 (a) 7, 8 and 9, *i.e.* Rs. 10,930-0-1 *plus* 1,329-2-8 = 12,259-2-9.
(*a*) No details given in Myitkyina report for columns, 5, 6, 7, 8 and 9.

APPENDIX II.

No. I.—REPORT ON EXPERIMENTAL GARDENING IN THE MYITKYINA DISTRICT FOR THE YEAR 1901-02.

Myitkyina garden.—The amount spent on this garden during the year was Rs. 904-8-7 including clearing ground and fencing and pay of two gardeners.

Fruit formed on nearly all the peach trees obtained from Saharanpur in January 1901. The season, however, was unfavourable for ripening as rain commenced to fall steadily on 9th April and continued with very little intermission to the end of May, just at the time when sunshine was required. One country, No. 2, produced 104 fruit of excellent size and quality fit for table, on one No. 4 and one "hakim" a few fruit ripened and a "bearlots slipstone" produced some fine large fruit which, however, had to be plucked unripe as they showed signs of rotting. The rain or worms which seemed to affect the fruit just as it was about to ripen, spoilt the produce of all the other peach trees. On the whole, however, the result of one year's growth only was very satisfactory and there can be no doubt that peaches will do very well in Myitkyina. In the Deputy Commissioner's compound one Saharanpur, No. 3, planted in January 1900, produced 112 fine ripe fruit and in a private garden three and four year old trees bore a tremendous crop which, however, suffered from the rain and from want of early thinning. The young peach plants obtained from Taunggyi in January 1902 were in blossom when taken from the box, and on one of them one fruit ripened. The apricots and plums put down in 1901 blossomed but bore no fruit. They have now grown into nice little trees. Pummelows are growing well, limes and lemons fairly, but oranges do not seem to thrive, though in the Deputy Commissioner's compound next door two old orange trees bear good fruit. I have tried lichis largely from seedling grafts and from seed, but have succeeded in raising only one plant which may now be considered safe, though three others are still alive. Insects which cause great destruction among all fruit trees here, except perhaps peach, have a particular liking for young lichi plants. White-ants have accounted for most of the plants I had hoped to raise. Other fruit trees are still too small for an opinion to be formed as to the probability of their success. A variety has been tried for experiment, many will of course fail.

Strawberries were grown from plants raised here last year. The crop was a very poor one, chiefly owing to the damage done by the great cricket [*Schizolactyla monstrosa*, Burmese (ဝရဲ)]. Hundreds of these were dug up and a strawberry or two found in almost every hole, but the destruction of the plants continued. The early rain probably caused these beasts to emerge from the earth before their usual season.

A small quantity of cauliflower, cabbage, peas, beans, beetroot and Brussel sprouts were grown from acclimatized seed, but with the exception of Brussel sprouts did not do as well as in the previous year when English seed was used.

I may here add that a grant of some 9·20 acres of land at Myitkyina has been given to a native gentleman from Madras and he has prepared it for fruit cultivation.

Sima garden.—The expenditure on this garden during the year was Rs. 275-8-9.

Fruit formed on nectarines and peaches but did not ripen. The trees had suffered for want of early cutting back. Owing to frequent changes of officers the garden has not had a fair chance. It is a pity that a taste for horticulture cannot be insisted on as one of the qualifications for the Civil Officer or Officer Commanding the Fort at Sima, but as this is not possible it can only be hoped that chance will supply an officer who will take an interest in the garden and will allow him to remain some time in charge of it. The only gardener is a Gurkha Military Police sepoy with no knowledge of fruit-growing. I have asked for a second gardener for next year.

The ordinary English vegetables were grown and were fairly successful. Strawberries were a failure through want of knowledge and care.

Sadôn garden.—The expenditure on this garden was Rs. 149-1-4.

From want of early cutting back and manuring none of the fruit trees were thriving when I inspected the garden in February. I then reported that it would be better to concentrate attention and spend the money available on one hill garden than fritter it away between two, and in consequence of my recommendation the Sadôn garden, as a Government garden, was abolished from 1st April 1902.

Good vegetables are grown in private gardens at Sadôn, and the strawberry crop there was a very good one.

MYITKYINA:
The 21st July 1902.

E. C. TOWNSEND, MAJOR,
Deputy Commissioner.

No. II.—REPORT ON EXPERIMENTAL ORCHARD AT SINLUMKABA, KACHIN HILLS, BHAMO, FOR THE YEAR 1901-02.

Grant.—The grant for the year was Rs. 2,820 and proved more than sufficient for the upkeep of the establishment.

The orchard is now sufficiently large to meet all fruit and vegetable growing experiments, and I would therefore recommend a further reduction of Rs. 800 in next year's grant.

2. *Expenditure.*—The expenditure during the year under report was Rs. 2,202-6-6 and there remained a balance credit of Rs. 617-9-6 as against the amount allotted.

3. *Receipts.*—The orchard is now in its third year and as the majority of the trees, such as apples, pears, cherries and the various sorts of nuts do not come into bearing until they are at least five years old, it can hardly be expected to show receipts to compare favourably with the expenditure. Again there is the drawback of no large market at which rapid growing fruit such as strawberries and vegetables can be disposed of. In the course of time I have no doubt the garden will be able to practically support itself, as such fruits as pears, apples, cherries and nuts command a fair price in the Bhamo market. The returns for the year were Rs. 35-5-9 as against Rs. 15-9-3 for the year 1900-01. The amount was, as usual, realized by the sale of strawberries and vegetables to the Military Police and the few visitors who came up during the season.

4. *Work for the year.*—During the rains the gardeners were employed in weeding the garden. The rate at which rank vegetation springs up during this season of the year is amazing and it takes the men all their time to keep pace with it. With a view to keeping down weeds, a box of English grass seed from Messrs. Sutton and Company was sown towards the end of the rains. The seed germinated splendidly and the experiment bids fair to be a success. The rains proved a failure and it was found necessary to employ a couple of extra hands to water the plants. The two deluge pumps which arrived in June last year were not fixed up as the firms which supplied them failed to send the handles. If I had been longer in headquarters than I was this season, I might have improvised wooden handles and have had them put in position. An attempt will be made in June to erect them. In May 1901 there were purchased the following indigenous fruit-trees for grafting purposes: apples 127, pears 4, peaches 53, cherry 5. These stocks and some that failed last season were grafted on in February 1902 by means of budding, but the results obtained were not very satisfactory owing in a great measure to the grafts, when about 4 inches long, being displaced from the stocks by storms. It was impossible to protect them as the storms swept up during the night. Those that have survived have shot up amazingly and have firmly established themselves. The other forms of grafting, namely, inarching, crown grafting, and splicing were not resorted to as the results from previous experiments proved unsatisfactory owing to the strong perennial winds which sweep this high range of hills. In January 1902 a consignment of fruit-trees comprising 23 apples, 27 pears and 48 peaches were received from the Taunggyi orchard. I was absent on tour when they arrived and they were attended to at once by the head gardener. They were planted out at once in previously prepared pits, and, with 14 exceptions, are doing well, *i.e.*, 14 died.

Orchard.—An addition of 137 trees were made during the year, *i.e.*, 98 trees received from Taunggyi and 39 successful grafts. Of the three-year old trees 25 per cent. displayed blossoms, and, with the exception of apricots and greengages, have set fruit, the peaches as usual being very numerous. But, as already reported, the early rains up here prevent them

ripening. The climate is unsuitable for this class of fruit. They require a warmer and drier one, and it has therefore been decided by the Deputy Commissioner and myself to remove this class to Lweje. The experiment will be reported on next year. Apples, pears and cherries thrive up here, are not affected by the rain and mature in the late autumn. In the spring *aphis* appeared on a few peach and plum trees. The infected trees were treated with a strong solution of nequas. I have observed that this pest generally appears on trees which receive too much farm-yard manure. The several species of nuts which have been planted are doing splendidly, and when they come into bearing should yield a handsome profit. The filberts, which last season had just sufficient life to throw up a few shoots from their roots, have apparently become acclimatized and promise to set fruit next season. A few of the more robust ones have already done so.

Vegetable garden.—There has been a further improvement in this branch of the garden, and, with the exception of lettuce and cabbages, all the other kinds of English vegetables can be grown throughout the year. The only drawback is the matter of reproduction, as the seeds obtained from the plants rapidly deteriorate. Rhubarb was sown for the first time in October, but most of the seedlings which germinated strongly were killed by frost. Those that have survived are doing well, but whether they will tide over the heavy rains is a fact yet to be established. The melons, squashes, vegetable marrows and globe artichokes, which were in their nursery days when the last report was submitted, yielded, with the exception of globe artichokes, very fair results. The heavy rain and damp which pervades the station during the monsoon months proved too much for the exception. During the season a considerable amount of vegetable seeds were distributed to the neighbouring Kachins. The Hoton Duwa's wife, who was one of the recipients, had the courtesy to present me with some of the vegetables. They were well-grown and of excellent flavour. With a view to encouraging the cultivation of both vegetables and cereals, I would suggest that an exhibition of fruits, vegetables and cereals be held once a year at Sinlumkaba, and suitable prizes be awarded for the best productions. The exhibition might be held about the second week in April.

Tubers.—The potatoes planted last season, and which were reported as being in a healthy condition, returned an abundant crop early in June. The crop was distributed gratis to the headman of surrounding villages for experimental purposes, but I regret to say most of the recipients reported unfavourably. The tubers were excellent and I can only attribute the cause of failure to lack of interest on the part of the Kachins. The tuberous artichokes, which were planted at the same time, failed entirely.

The head gardener resigned in October 1901 and his place was filled up by the present man, who is a good deal better, and is a man who takes a personal interest in his profession.

Flowers.—Such annuals as pansies, nasturtium, nemophila, carnations, pinks, phlox drummondi, portulaca, poppy, asters, petunias, foxglove, stock, grew to perfection and were the admiration of the few visitors who had occasion to visit the garden. Flowering bulbs, which were grown for the first time, left nothing to be desired.

SINLUMKABA:
The 12th May 1902.

D. W. RAE,
Civil Officer.

No. III.—REPORT ON THE EXPERIMENTAL CULTIVATION IN THE CHIN HILLS FOR THE YEAR 1901-02.

THIS is the third annual report submitted and deals with the year ending 31st March 1902.

Expenditure.—The total expenditure under all heads has been Rs. 1,204-11-6 as against Rs. 1,225-13-9 last year.

Receipts.—The produce of the garden at Falam, with the exception of strawberries, onions and potatoes were supplied to the inhabitants of the post on payment of a monthly subscription of Rs. 2. During the months of September and October no subscriptions were collected as the garden produced no vegetables. The receipts under all heads reached the total of Rs. 251-8-6 as against a total of Rs. 209-5-0 last year. I hope next year the receipts will be larger. At Tiddim and Haka small vegetable gardens are maintained but as officers at those posts have to supplement out of their own pockets the small amounts allotted to help to maintain the gardens, no subscriptions are collected.

Fruit orchard.—I regret to say that no great advance is shown in the fruit-trees in the Falam orchard. The trees bore plenty of fruit, but, with the exception of one peach and one apple, none of the fruit ripened. The trees were carefully pruned and syringed with phenyle and water and warm water and soap, and although several of the trees at the present moment bear a quantity of fruit, I am afraid the fruit will not ripen. Twenty-six trees died during the year, their roots having been eaten by grubs. Grafting experiments were tried and 28 wild peach trees and also some wild pear trees were obtained and slips from the cultivated trees grafted on to them. Only two grafts were successful. Budding experiments were also undertaken but proved unsuccessful. This was due, I think, to the fact that the experiments were attempted too late in the year (March and April) when heavy winds prevailed. More grafting and budding experiments will be attempted next year and at an earlier season.

The following fruit-trees were obtained from Taunggyi, Shan States : apricot 10, cherry 10, plum 10, pear 10 and apple 10. A few of the trees have died, but the majority are doing well. Fifty slips of walnut trees, eating chestnuts 50, horse chestnuts 50, and deodars 50 were obtained from Naini Tal. All, with the exception of the deodars, are doing very well. Only ten of the latter survived and, unless the rains come soon, it is doubtful if they will live. The slips were planted in a nursery and are about to be transplanted and placed about the station (Falam). Seeds of orange, apple, greengage, peach, plum and other fruit trees have been planted as also seeds of two kinds of pine trees. It is too early as yet to report about these seeds, with the exception of the pine seeds which appear to have struck.

At Tiddim the fruit-trees appeared to be flourishing and most of the trees had a very good crop of fruit on them. Unfortunately a heavy hailstorm at the end of April stripped the trees of almost all the fruit. Four pear trees died during the cold season. Until Tiddim is furnished with a good water-supply during the cold season, it will be impossible to expect any great results from the fruit-trees or the vegetable garden at the post.

At Haka the fruit-trees, 16 in number, appear to be doing well and bear a good crop of fruit. Whether the fruit will ripen is, however, doubtful.

Potatoes.—The potato seed sown in March 1901 produced an excellent crop of potatoes, quite the best ever seen in Falam. Early this year 8 maunds of potato seed were received and were distributed (with the exception of a small quantity which were planted in the Falam garden) among Chin villages. Careful instructions have been issued to the Chins regarding the method of planting the seed, &c., and reports lately received show that the seed is doing well, and I hope the experiment will prove a success, and that in a year or two the Southern Chins will grow their own potatoes and sell in our posts and also in the plains adjoining the hills. The result of the experiment will be reported on fully next year. The Siyins (North Hills) have for some years grown potatoes and find a ready sale for their produce. This year the potatoes they brought for sale were very bad, due to the seed having been bad. The new supply of seed lately issued to them should produce an excellent crop.

Strawberries.—Owing to a mistake the strawberry plants sown last year were pulled up during the rains and new runners were planted. In consequence the plants fruited later than usual and the yield of fruit was not so large as it should have been. The fruit, however, was of very good flavour and the berries large. From the 1st April 1901 to the 31st March 1902 167½ pounds of fruit were obtained and sold, the sale realizing Rs. 41-14-0.

Vegetable garden.—During the dry season the vegetable garden at Falam produced a good supply of vegetables, and all the European households as well as others received a daily supply. French beans, carrots, cabbages, spinach, Brussel sprouts, cauliflowers, beetroot, radishes and lettuce did very well indeed and a large supply of each were obtained. Vegetable seeds obtained from Saharanpur did not prove successful. Those obtained from Mussorie did very well, and in future seeds will be obtained from Mussorie.

A good outturn of onions was obtained, and 741 lbs. were sold, the sale realizing Rs. 92-10-0. A much larger quantity should have been obtained but for the dishonesty of a temporary gardener who was placed in charge of the garden while the permanent gardener was on leave, and who was suspected of having misappropriated a considerable quantity. The charge could not, however, be proved against him.

Establishment.—The establishment is the same as last year's, one gardener and one servant. The gardener does not appear to have gained much knowledge in gardening, and his methods at times are primitive. He is, however, the only man available with any knowledge in gardening, and in consequence his services have to be retained. If a really good gardener could be obtained, I feel sure very much better results could be obtained.

Oats and wheat.—No experiment on any large scale was attempted this year, the attempts in previous years having proved failures. A small quantity of barley was sown in the vegetable garden, and the outturn was satisfactory. Oats and wheat will undoubtedly grow in these hills, but experiments on any large scale would require the services of a larger establishment than is at present available. Next year, however, I propose issuing wheat seed to the Northern Chins, who are more advanced than the central and southern tribes. I think that if a sale can be obtained for the wheat, they would give the attention which is required and which we with our small establishment are unable to give.

General.—The rains were normal and no exceptionally heavy storms were experienced during the year. The vegetable garden was extended in order to allow of more strawberry beds being laid out, and wire-fencing at a cost of Rs. 152-4-0 has been obtained to place round the entire garden. One of the principal objects now is to encourage Chins to grow potatoes and so build up a trade in the plains. Once they see they can obtain a sale for the produce in the plains, I feel sure they will take every care to ensure the production of good crops.

The want of a really good gardener is greatly felt, and until the services of such a man are obtained, no great results can be expected. On the whole the results, considering the man who is in charge, are not unsatisfactory.

FALAM:
The 19th June 1902.

E. O. FOWLER,
Superintendent, Chin Hills.

No. IV.—REPORT ON EXPERIMENTAL CULTIVATION IN THE SOUTHERN SHAN STATES FOR THE YEAR 1901-02.

Grant.—The budget allotment for the year was Rs. 2,419, which has been found to be sufficient.

Expenditure.—The total expenditure under all heads has been Rs. 2,762-13-0 as against Rs. 3,315-10-6 last year and Rs. 3,843 in the year preceding.

Receipts.—There has been a considerable falling off in receipts which this year amount to Rs. 2,416-11-3 as against Rs. 3,480-13-2 last year. Practically the whole of this is due to reduced sale of potatoes. The cold weather crop was an entire failure and was condemned by Mr. Hildebrand before my arrival at Taunggyi. There has also been a falling off in the sale of vegetables which is no doubt due to the fact that previous buyers now rear their own crops. On the other hand there has been a considerable increase in the sale of strawberry plants and fruit-trees. The latter have been bought by chiefs and others in the Shan States and are now widely spread.

Work for the year.—Of this I know very little. I reached Taunggyi in the latter part of March and left almost immediately on tour, returning on the 15th May. Mr. Hildebrand left the following notes:—

"There has been nothing special, so far as I can recollect, to note in the cultivation during the year. Some sugar-beet seed was sent for experiment and put in. It now looks first-rate. I may note, however, that the same experiment was tried some seven years ago and the tubers sent to the Director of Land Records. The tubers were excellent, but what was done with them and how much sugar expressed I never was informed. I gave some of this batch of seed to Mr. deSouza of Thandaung, but he reported that it was not a success and only a few plants came up. It has long been clear to me that the land is fairly played out for potatoes. I have, therefore, instructed Maung Se what to do for the future, namely, to put in only one quarter of the flat delta area of alluvial soil in the orchard annually and so give each quarter plot four years' rest. Formerly the whole of this delta area has been cultivated by spade labour and has paid for it in the crop. It should now be ploughed."

Establishment.—The establishment remains the same: a head gardener, three under-gardeners and four coolies. The head gardener, Maung Se, has been continuously employed since Mr. Hildebrand commenced experimental cultivation and has acquired a considerable amount of experience. Possibly, however, it might be well to re-engage the former head gardener, Mr. Colyear, who is now employed in the Victoria Gardens, Bombay. Mr. Hildebrand had a fund of experience, in which I am totally wanting, and he was able to devote an amount of time to the garden and orchard which I do not find to be at my disposal.

General remarks.—Both cherry and pear trees continued to be without flower and fruit. This is the more singular since both trees grow freely wild in most parts of the Shan States. The netting procured for the purpose was this year put over the fruit trees with satisfactory results in the saving of the fruit. The strawberries have this year continued to fruit into the first week in June, having commenced fruiting in November or December. This late and prolonged production is probably due to the slight rain which has fallen up to now. Of other fruits only peach and damson trees have fruited since I came. They are of very fair though not of the finest quality. A certain number of *cherimoyer* trees have been sold to various persons. One gardener has been declared competent and has been returned to the Myelat which sent him to the orchard for instruction. It seems probable that the orchard has reached the limit of its growth. It is self-supporting and it instructs gardeners and distributes plants. Until a railway is constructed it cannot be expected to do much more and its results to the Shan States will be limited to local pleasures in the form of flowers and scattered luxuries in the shape of foreign fruits. It has proved that all manner of vegetables and fruits can be grown here, but these cannot be sold either by the orchard or by people who learn from and imitate the orchard, until a rapid and cheap form of transport is available.

The growth of garden and orchard produce will follow the course of the cultivation of wheat and of potatoes. These were produced by the Shans with some enthusiasm until they found that they could not be sold at a profit, or indeed at all, beyond a certain amount. Then the cultivation was in large part dropped. It will be the same with the cultivation of foreign vegetables and foreign fruits until the railway provides our outlet for them.

TAUNGGYI:
The 7th June 1902.

J. G. SCOTT,
Supdt. and Political Officer,
Southern Shan States.

No. V.—REPORT ON THE EXPERIMENTAL GARDEN, KATHA, FOR THE YEAR 1901-1902.

THIS is the first annual report submitted and the first year for which any grant was made. The proposal to establish a garden here was first made by my predecessor,

Mr. Houghton, in October 1897, the object being to introduce the culture of non-indigenous fruit and other trees into the district. This proposal was, however, abandoned then in favour of a scheme suggested by Mr. Nisbet, then Conservator of Forests, Mandalay, of obtaining and distributing fruit-trees gratis to the people. The scheme was tried for two years in succession—in 1898 and 1899—and two large consignments of trees were obtained in those years from Saharanpur and distributed in this way to *thugyis*, cultivators, *pôngyis* and others interested in horticulture. A large proportion of the trees did well, but it was found that, in spite of instructions distributed, little pains had been taken with the after-growth and training of the trees. It was, therefore, decided that this scheme of distributing trees gratis was not only expensive but ineffectual in attaining the objects aimed at, and that if any headway was to be made at all to effect the introduction of such trees as peach, apricot, &c., the only way to attain that object was the establishment of an experimental garden where *thugyis* and others can buy them, and where they can receive practical hints and advice regarding their culture from time to time. The commencement of this garden, therefore, is the result of Mr. Houghton's second effort made in November 1900, but as he left soon after sanction was accorded to its establishment, the work of starting it devolved on me.

Receipts and expenditure.—The grant for the year was Rs. 2,500, almost the whole of which was utilized. The receipts amounted to Rs. 3-5-0 only, obtained by sale of a few pounds of surplus cold season vegetables which were sold more by way of inducing Shans and others to visit the garden and study the methods adopted rather than for profit.

Work for the year.—The first consideration was to select a site. An area, a little over 3 acres in extent and situated on the north bank of a perennial stream, a few hundred yards immediately north of my house, was cleared and partly stumped. This has been fenced in with stout junglewood posts and barbed wire. The land is undulating and the soil for the most part red clay. No better soil was procurable within a reasonable distance of Katha.

The next question was to secure an adequate and constant water-supply, a good supply of water being indispensable and difficult to arrange for round Katha. To this end a dam of about 90 feet long, 14½ feet high, 12 feet wide at top and broad in proportion at bottom, was constructed across the stream. The water is caught by it and forms a sort of tank from which the water is lifted by a pump and distributed to the garden by galvanized iron gutters and bamboos. Clearing, stumping, and work generally was not commenced till the middle of August.

Orchard.—The fruit-trees were obtained from Taunggyi and Saharanpur. They arrived here at the end of January and were planted out immediately. About 250 to 300 holes were prepared in advance for them in August and September. These were dug 4 feet square and refilled with a mixture of half earth and half well decomposed manure with a top dressing of lime. As I afterwards found, the holes were dug too deep and a depth of 2½ feet would have been ample. The casualties have been heavy and amount to nearly 40 per cent. of the total number received. This is mostly due to the very poor condition in which many of the trees arrived, doubtless due to the trying and lengthy voyage from Saharanpur. The trees were carefully packed and despatched, but the varying temperatures, &c., through which their voyage had brought them, seemed to have had a disastrous effect on the weaker plants and seedlings. Perhaps it may be more advantageous to obtain future consignments in small parcels by post. A good many trees also perished from attacks by white-ants. It is hard to eradicate these pests once they attack the roots of trees.

In addition to the fruit-trees obtained from Taunggyi and Saharanpur, the following also are being tried:—

Oranges obtained locally from Banmauk and Mansi; they being indigenous will, if successful, prove valuable for grafting in the future.

West India papaya grown from seed obtained from Mr. Wright of Kyaukpazat, where they are now firmly established.

Pine from seed obtained from the Conservator of Forests, Mandalay. Tea from seed from the Director of the Department of Land Records and Agriculture and a variety of plaintain known as "Shwe-hnget-pyaw" in Lower Burma. These were kindly supplied by the Deputy Commissioner, Amherst. They arrived in rather poor condition, but nine out of 15 plants are alive.

Some 12 rubber tree layers, obtained from the Deputy Conservator of Forests, have also just been planted out and are doing excellently.

I have raised some half dozen lichi plants from seed obtained from a solitary tree in Katha.

Vegetable garden.—This is a small patch, about a quarter of an acre in extent, on the side of a slope sloping down to the garden tank. The soil, which is stiff red clay, was enriched with a liberal supply of well decomposed manure, with sand and lime worked in it.

The following imported and acclimatized cold-season vegetables were obtained from Saharanpur and tried. The results on the whole were satisfactory.

Artichokes, crown.—Many germinated and plants have grown vigorously, but no heads formed although several are still in vigorous growth.

French beans, Canadian wonder and Negro black.—Good.
Beans, Scarlet runner.—Good.
Beet, Red turnip and deep-blooded.—Fair.
Brussel sprouts, matchless.
Cabbage, Drum head and Early York. } Grew vigorously at first and some good heads were formed, but most of them were attacked by caterpillars and others died off towards the approach of the hot weather. This is probably due to late sowings.

Carrots, Early red horn and French horn.—Early sowings gave fair results, but later sowings failed.

Cauliflower, Italian and French.—Like cabbages, grew vigorously at first and only a few good heads were obtained. Most of them were attacked by caterpillars or died off on approach of the hot weather.

Celery, white, solid.—Good. Only one sowing was made in boxes and the young plants transplanted into specially prepared trenches. Grew vigorously and flourished till the beginning of the hot weather.

Cress, Australian.—Good. Is very easily grown. Several sowings were made.

Endive, Green, curled, winter.—Good; of vigorous and fast growth. Many turned out excellent when bleached.

Lettuce, Cabbage, Malta, early white spring, flat, self-folding.—Very good. Several sowings were made and continuous crops obtained. A few sowings were made at the beginning of the hot weather with fair results.

Leeks, Long winter.—A small but fair crop was obtained.

Onions, Blood red and Spanish.—Failed.

Parsley, Double curled.—Very good indeed. There is a small bed of it still remaining.

Parsnip.—Failed.

Peas, Bliss' abundance, Duke of Albany and McLean's Little Gem.—All grew well. Two or three sowings were made and good crops obtained.

Radish, Red turnip and scarlet olive-shaped.—Not large, but good eating.

Spinach, Broad Flanders.—Good; of easy growth.

Tomatoes, Criterion, Large red, Perfection and Trophy.—All did well and most of the fruit were fairly large and of good flavour. Perhaps better results might have been obtained if more attention was paid to pruning and training.

Turnips, Early white, Dutch and Snow ball.—Seeds germinated well, but results were not as satisfactory as might have been expected.

The acclimatized varieties tried were artichokes (Green globe), beans (broad), beet (long red), carrots (scarlet and white), cauliflower, cress, endive, lettuce, mustard, onions, peas, radish, spinach, tomato and turnips. All did well except artichokes, cauliflower, onions and turnips for reasons explained above. A few varieties of Sutton's seeds from my private stock were also tried (two or three varieties of English vegetable marrow) with very good results.

Strawberries.—A hundred plants from Taunggyi and 500 from Sarahanpur were obtained and planted and did fairly well. There should be a big crop next year. I tried some of the plants in island cultivation (issued to Shans), but a rise of the river washed them out. The following hot and rainy season vegetables are now being tried, musk melon, cucumber, pumpkin, squash, vegetable marrow, maize, capsicum, chachinda, brinjal, Goa bean, gourd, tipari, ladies' fingers and tomato. About 10 lbs. of ground-nut seed obtained from the Director of the Department of Land Records and Agriculture were planted out in May. All have germinated and the young plants, which are now about 6 or 7 inches high, promise well.

Establishment.—The scale sanctioned is: one gardener on Rs. 40 and four coolies on Rs. 15 each per mensem, but the present gardener only draws Rs. 20. After several unsuccessful attempts to obtain a trained gardener from all likely places in India, and even in Assam, I was compelled to employ a local Kadu, an ex-forest guard, whose knowledge of gardening is practically *nil*, and requires constant and careful supervision. The coolies are also all local Kadus or Shan-Burmans, and as ignorant of gardening as the gardener himself. I am now trying to secure the services of a trained Shan from the Taunggyi orchard.

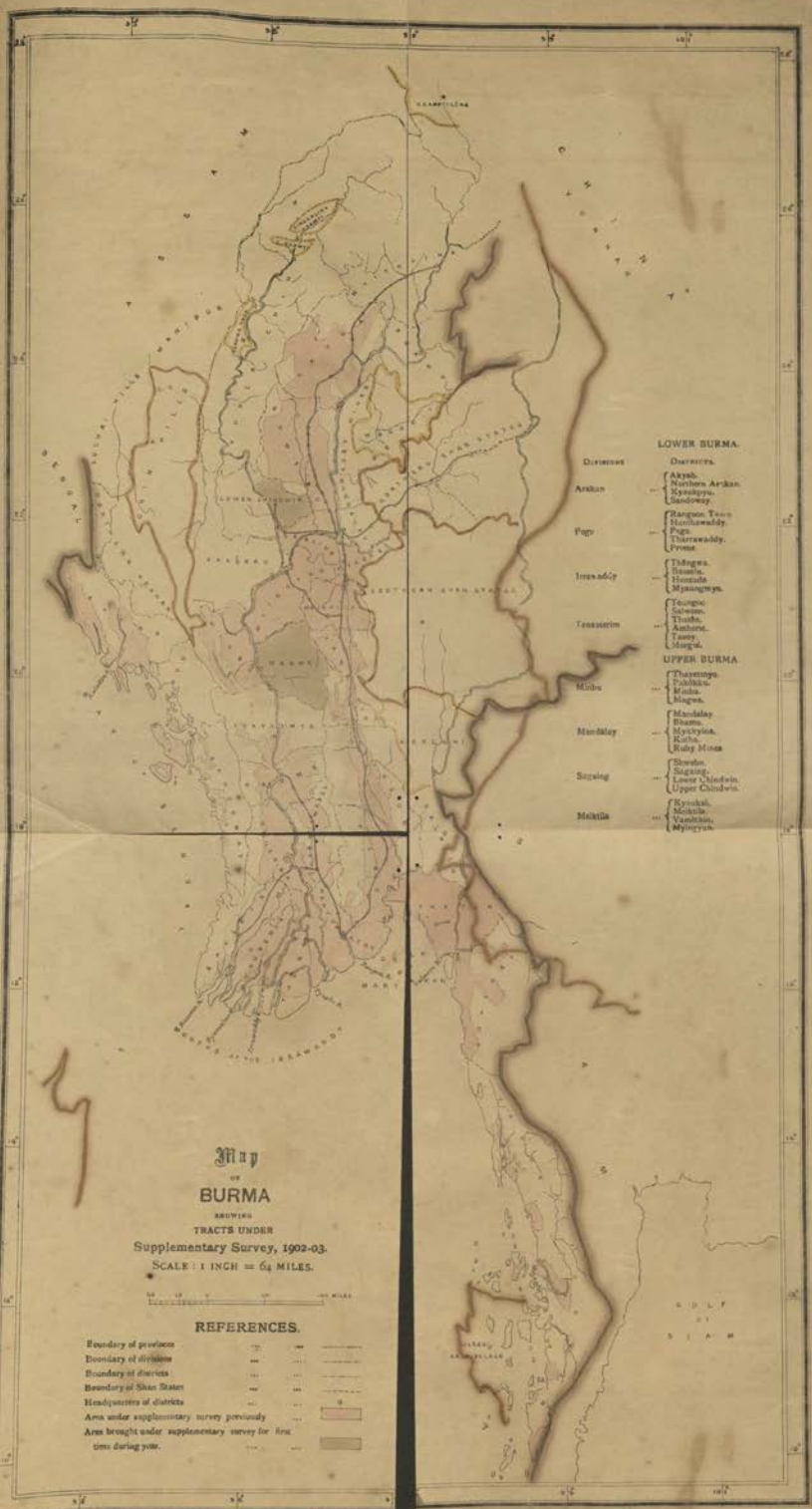
Insects.—White-ants are a pest. Other bugs and beetles abound and have to be fought in various ways. Nothing, however, attacks the peach trees.

Manure.—Well decomposed horse or cow dung is easily obtained and costs about annas 8 a cart-load. This, with some lime added, has been liberally used for both trees and vegetable garden.

General.—I think rubber trees, say, 250 at least, might be planted up the depressions above the garden and along the edge of the high ground bordering the *mayin* cultivation near the garden. They would cost (for tree, planting and fence), say, Rs. 2 per tree: no insect eats them; they grow fast and yield a huge return at end of 12 or 15 years. Meantime they could be easily looked after by the garden staff.

A. E. ENGLISH,
Deputy Commissioner, Katha.

G. B. C. P. O.—No. 54, D., L. R. & A., 5-11-1902—335.


LOWER BURMA.
Divisions
Districts.
Arakan
Akyab.
Northern Arakan.
Kyaukpyu.
Sandoway.
Pegu
Rangoon Town
Hanthawaddy.
Pegu.
Thatôn.
Prome.
Irrawaddy
Thônguê.
Bassein.
Henzada.
Myaungmya.
Tenasserim
Toungoo.
Salween.
Thatôn.
Amherst.
Tavoy.
Mergui.
UPPER BURMA
Minbu
Thayetmyo.
Tabilôkin.
Minbu.
Magwe.
Mandalay
Mandalay.
Shamo.
Myitkyina.
Katha.
Ruby Mines
Sagaing
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Sagaing.
Lower Chindwin.
Upper Chindwin.
Meiktila
Kyaukse.
Meiktila.
Yamethin.
Myingyan.
Map
OF
BURMA
SHOWING
TRACTS UNDER
Supplementary Survey, 1902-03.
SCALE : 1 INCH = 64 MILES.
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Boundary of provinces
Boundary of divisions
Boundary of districts
Boundary of Shan States
Headquarters of districts
Area under supplementary survey previously
Area brought under supplementary survey for first time during 1902.

LAND RECORDS ADMINISTRATION REPORT

FOR

THE YEAR ENDING 30TH JUNE 1903.

RANGOON:

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1903.

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[The maximum limit of the text of the Report is 17 pages.]

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Sessamum	*ib.*	*ib.*
Paddy	*ib.*	21
Avocada pear	*ib.*	*ib.*
Water and musk melons	*ib.*	*ib.*
Sugar-cane	*ib.*	*ib.*
Beans	*ib.*	*ib.*
Arhar dall	*ib.*	22
Jowar	*ib.*	*ib.*
Oats	*ib.*	*ib.*
Sericulture	*ib.*	*ib.*
Manures	*ib.*	*ib.*
Miscellaneous	24	*ib.*
Agricultural banks	*ib.*	*ib.*
Monographs	*ib.*	*ib.*
Reports and Returns	*ib*	23
Services of officers	25	*ib.*

LAND RECORDS ADMINISTRATION REPORT

FOR THE YEAR ENDING 30TH JUNE 1903.

Prefatory.

The Department was in charge of Mr. A. Gaitskell, I.C.S., up to the 18th March 1903, when he proceeded on leave. Mr. O. S. Parsons, I.C.S., officiated as Director for the remainder of the year. The Assistant Director Mr. J. C. Clancey, F.R.A.S., was at his post throughout the period under report.

During the year 8 Superintendents were granted short leave, and 2 long leave. There was one grade promotion and one grade reduction. One Superintendent was transferred in July 1902 to the Subordinate Civil Service, and 2 probationers were newly appointed to the Department. One Superintendent was appointed in August 1902 to officiate as *Akunwun* and Registrar of Town Lands, Rangoon, and a Probationer of the Land Records Department was later deputed to assist him. Several transfers of officers from district to district were unavoidably made, and all the Probationers, excepting the last joined, held district charges. A new district, Lower Chindwin, was opened to Supplementary Survey and a Superintendent was posted to it.

The Department is much undermanned, and considerable difficulty is experienced in respect of granting leave and of placing qualified and experienced officers in charge of districts. This matter is however to form the subject of a separate representation to Government.

The present report deals with the agricultural year ending 30th June 1903, whereas the previous report embraced a period of 15 months (April 1901 to June 1902).

SECTION I.

LAND RECORDS.

Demarcation preliminary to survey.

1. A total area of 529 square miles was demarcated in Shwebo at a cost of Rs. 2,740. The demarcation work in Pakôkku district was continued and 528 square miles were completed at a cost of Rs. 2,022. The area of the district which is being demarcated comprises such tracts as it is considered, at present at any rate, necessary to bring under survey and subsequent settlement. In consultation with the Deputy Commissioner, the officiating Director drew up a demarcation programme which was accepted. The demarcation maps furnished to No. 7 Party of the Survey of India are described by the officer in charge as generally very good, especially those of the Myaing township of Pakôkku district, and the demarcation on the ground as a whole is also reported by him to be satisfactory.

Survey by No. 7 Party, Survey of India Department.

2. In Kyaukpyu an area of 42 square miles was traversed and 81 square miles cadastrally surveyed by No. 7 Party, the work in that district being thus brought to a close. The survey was confined to tracts actually under cultivation. These were mostly scattered and frequently at some distance from one another. The *kwins* were not always surveyed as demarcated on the ground and more often than not the margins of waste allowed for in the demarcation were excluded from survey. The party also completed in traverse 458 square miles in Pakôkku and 302 square miles in Shwebo; also the cadastral survey of 606 square miles in the former district. The cost of the operations of the field-season for the traverse section

amounted to Rs. 43,482 and for the cadastral portion to Rs. 72,988, while the estimated cost of the entire work of the recess-season is put at Rs. 91,900.

Revision survey.

3. The revisions of survey in the Aingkalaung, Bawle and Myaungtanga circles of the Hanthawaddy district begun last year were completed in the year of report. Besides the re-surveys, the Party undertook and finished the cadastral survey of a strip of new country which has recently come under cultivation, of an average width of two miles and an area of 42 square miles, also the traversing of three *kwins* which remained over from the year before. The mapping relating to last year's survey was finished in the recess and the *kwin* maps lithographed at the Government Press ; the map work of this year is in hand, and printed copies of the *kwin* sheets will be ready in time for the Settlement Party in the ensuing season. Both the field and recess work were closely examined on two different occasions by the Assistant Director and found to be of a professional type. The Superintendent gave the work careful supervision. The total area mapped consisted of 201 square miles, containing 75,370 acres under cultivation. The holding-marking on the maps was done at the time of survey. The cost of the entire work amounts to Rs. 17,664.

The recess-work relating to the revision surveys executed last year in the districts of Thôngwa, Myaungmya and Bassein was inspected by the Assistant Director who found it to have been done in a creditable manner. The maps were printed at the Government Press. All the requisite re-surveys in advance of settlement in the two districts first named have thus been got ready. In Thôngwa, however, 103,748 acres of cultivation situated in the Danubyu and Yandoon townships are, owing to the numerous changes in field boundaries and to large extensions of cultivation, still to be re-surveyed prior to re-settlement. The re-survey will be undertaken by a special staff to be brought over from Hanthawaddy on the close of the revision work in that district.

In Toungoo owing to the rapid extension of cultivation in the Minbôn and Zeyawadi circles it was found necessary to appoint a special establishment to bring the survey properly up to date. The survey done consisted of 36 square miles in all, including 15,571 acres under cultivation, at a cost of Rs. 4,028. The work was tested by the Assistant Director and was of good quality on the whole, though it would have been preferable to have prepared the skeleton plots from co-ordinate values instead of from the original survey sheets. The connections with survey stations, too, were but few owing to a large number of the permanent survey marks being no longer traceable. The importance of preserving such marks cannot be over-rated, as they are of the utmost value for future surveys. There is yet an area of about 61 square miles, containing at present approximately 24,182 acres under cultivation, which is said to require a revision of survey later when field boundaries assume more permanency.

In Kyauksè the revision surveys commenced last season in order to assist the Revision Settlement Officer engaged in the district were continued. A staff of 2 Inspectors, 20 surveyors and 2 draughtsmen with the usual complement of menials working under the local Superintendent of Land Records, surveyed 96 square miles, of which 51,028 acres were under cultivation and the remainder waste land. The cost of the survey was Rs. 15,107. The survey was necessitated chiefly by the remodelling of irrigation canals and their distributaries. It is described as having been well connected with theodolite stations of the older traverses. The Assistant Director kept a strict watch on the various operations enumerated above and afforded such assistance as was required.

The annual re-survey of cultivation on impermanent island and alluvial *kwins* of the Irrawaddy river and elsewhere was executed by local and special surveyors. In Sagaing, 11 surveyors engaged for four months, surveyed an area of 17 square miles containing 6,917 acres of cultivation. In Lower Chindwin 2 surveyors completed in two months the survey of 8 square miles with 3,261 acres under cultivation at a cost of Rs. 200. In Myingyan an establishment of 10 surveyors did the survey of 34 square miles, of which 17,255 acres were cultivated at a cost of Rs. 1,467. In Mandalay an area of 4,454 acres was re-surveyed by extra

surveyors. In Tavoy a small area of 764 acres in Kanyôngyun circle was re-surveyed by 2 special surveyors at a cost of Rs. 327 which was debited to the *taikthugyi* through whose neglect the work was necessitated.

Special surveys.

4. The recess-work connected with the Samôn valley survey in Meiktila and of the survey in the Amat, Pegôn and Kyagan circles of Myaungmya was finished in the year. The Assistant Director inspected the office work of the latter survey and found the mathematical results of the traverses good and the surveys professionally executed. The maps were lithographed in time for the work of the Settlement party which operated in the Myaungmya district during the current year.

In Meiktila a special surveyor was employed for six months in the survey of irrigation projects at a cost of Rs. 686, which was debited to the Irrigation Department. In Tavoy the survey of the town on a large scale which was begun last year was continued and 775 acres were mapped by 2 surveyors, at a cost of Rs. 320, debited to the municipality. The survey is not yet completed. In Pa-an circle of Tavoy 4 *kwins* comprising 3,000 acres, were traversed by an Inspector of Land Records, of which the detail survey will be undertaken by a special staff working next season in the district on the survey of extensive blocks of new cultivation. In Kyaukpyu an Inspector of Land Records cadastrally surveyed 2 *kwins* with an area of 823 acres in tracts lying outside supplementary survey. In Katha extensive surveys of cultivated tracts outside the already cadastrally surveyed areas are to be taken in hand in the coming year. The estimated area is about 60 square miles containing approximately 18,937 acres of cultivation which will require to be mapped. The approximate cost of the operations is set down at Rs. 17,300. The work will have to be done in one season, as the Settlement Officer who is in the district and who will utilize the maps for settlement intends making the year 1903-04 the year of settlement for the whole district. The advance demarcation is being attended to by the local Land Records Inspectors. The work is to be in charge of a special Superintendent. In the Minhla subdivision of Thayetmyo, owing to the recent introduction of acre-rates, an area of 30,534 acres was surveyed by the District Surveyor assisted by 16 surveyors, for the *ya* lands, 9 surveyors for paddy and garden lands, and 2 surveyors for the *mayin* and *kaing* assessments. Several inaccuracies in survey were discovered and the work did not receive sufficient check. The surveyors were paid out of the thugyis' commission. From 1st April 1903 2 inspectors have been appointed for the upper section of the district who have been instructing headmen in the elements of surveying, with a view to dispensing as much as possible in the coming year with special surveyors. The portion of the district referred to has not yet been cadastrally surveyed. A sum of Rs. 1,000 was sanctioned for special staff of one Inspector and 5 surveyors to mark the holdings of 88 *kwins* in the Sandoway district which were cadastrally surveyed by No. 7 Party of the Survey of India in the previous year and of which published maps were received during the year of report. The entire work was accomplished within a period of four months. In the Tavoy district a tract of country situated within four circles, and falling outside the supplementary survey tract, of compact blocks with an area of about 31 square miles, containing approximately 10,000 acres under cultivation, is to be cadastrally surveyed next season by a small special local agency staff, working under the orders of the Superintendent of Land Records, at an estimated cost of Rs. 3,926.

Fishery surveys.

5. No fishery surveys by special establishments were undertaken in the year.

Potta survey.

6. In Hanthawaddy 726 blocks were mapped, with an area of 13,116 acres The survey was done by a staff of 32 surveyors and 5 Inspectors, and cost altogether Rs. 6,177. The demarcation of the *pottas* is reported to have been efficiently done. The *potta* surveys in Pegu were carried on even on a larger scale than last year. The establishment employed for the survey portion consisted of 1 head Inspector, 11 junior Inspectors, 55 surveyors and 256 menials drafted mostly from India. The *potta* lands were especially numerous on the Sittang accretions in Yitkangyi circle of Payagale township, and in Nyaunglebin township where a large area has been

cleared of jungle and brought under cultivation. Operations were started towards the end of November and concluded about the middle of May. The whole staff were placed under the direct orders of 5 grant officers who were specially appointed by Government to deal with pending cases. The total area surveyed was 97,100 acres at a cost of Rs. 35,238. Thorough demarcation is said to have been insisted on, and neglect in this respect led to the rejection of 268 cases. The Inspectors checked most of the work, the Superintendent being unable to examine more than a few cases. The survey work is described as being on the whole very satisfactory. The head Inspector did excellent work and has since been made a Myoôk.

In Tharrawaddy a staff of 2 Inspectors and 6 surveyors surveyed 6,152 acres at a cost of Rs. 2,144, which was met from the fees paid by applicants for grants at annas 8 per acre. The *potta* Inspectors checked two-thirds of the work and the Land Records Inspectors helped in the testing to a small extent. The survey work is stated to be of fair quality. In Myaungmya a special grant Myoôk, 1 Inspector and 5 surveyors were employed for 6 months on the survey and disposal of *pottas* covering an area of 2,241 acres. Most of the demarcation in Pantanaw township was said to have been defective and had to be re-done, while elsewhere it was found good. The cost amounted, in all, to Rs. 1,878. The Commissioner remarks upon this work in the following terms, "the grant Myoôk and his staff have done good work, at a comparatively trifling cost to Government, and relieved Subdivisional and Township Officers of duties connected with the issue of *pottas* which they could not have done without neglecting others equally if not more important." In Toungoo a special staff of 2 Inspectors and 15 surveyors with 51 chainmen surveyed in a space of four months an area, in Ôktwin and Tantabin townships, of 12,933 acres at a cost of Rs. 5,868. The demand for land in these two townships is said to be still keen, and immigration of Taungthus from the Thatôn district into the latter township continues. In addition to the above an area of 1,896 acres was surveyed in Shwegyin township by 3 surveyors on the piece-work system at a cost of Rs. 408. The applicants in this part also were mostly Shan-Taungthus from Thatôn district. The land applied for in grant was frequently found undemarcated, and had to be marked out at the time of survey. The survey work is said to have been good. In Amherst a staff of 3 Inspectors and 12 surveyors were specially engaged for the survey of a total *potta* area of 15,701 acres, the cost of which amounted to Rs. 5,456. The piece-work system of payment to both Inspectors and surveyors adopted last year was again in force. In several other districts minor areas were surveyed by special surveyors, as follows: in Sandoway 972 acres, mapped at a cost of Rs. 93; in Mergui 276 acres at a cost of Rs. 386; in Thayetmyo 629 acres, fees to meet the cost being paid by applicants at rates varying from annas 3 to annas 6 per acre; in Katha 1,216 acres, at a cost of Rs. 600; in Sagaing 1,181 acres at a cost of Rs. 591, fees being paid by applicants at the rate of annas 8 per acre; in Kyauksè 648 acres, at a cost of Rs. 170; in Yamèthin (where both the demarcation and survey were defective) 515 acres at a cost of Rs. 329; in Myingyan 583 acres, at a cost of Rs. 192, and in Henzada 3,064 acres, at a cost of Rs. 272. The ordinary Land Records staffs, also, undertook and completed the survey of certain areas; in Akyab 6,709 acres; in Kyaukpyu 3,078 acres; in Thatôn, with the assistance of 7 special surveyors, 11,830 acres; in Toungoo 1,774 acres; in Tavoy 243 acres; in Mergui 164 acres. The greater portion of the surveys in the two latter districts was done in the height of the field-season when the local surveyors should have been engaged on their supplementary survey and assessment work alone, and should not have been put on work in connection with *potta* applications which could have been, without inconvenience, attended to later.

Area under and cost of Supplementary Survey, Statement I.

7. The total area under supplementary survey was 37,634 square miles as against 30,720 square miles of last year. The total assessment was Rs. 2,04,27,225, an increase of over 14 lakhs on last year's assessment. The increase in the area over which operations extended was brought about by extensions of cultivation, issue of grants, revision and special surveys. In Bawni circle alone of Pegu district 183 square miles were for the first time brought under supplementary

survey operations. These causes also, the expiry of the term of exemption from revenue in the case of grants, the introduction of Settlement rates into Myingyan and Thayetmyo, and of revision Settlement rates into the Hanthawaddy, Prome, Tharrawaddy, Pegu and Henzada districts of Lower Burma, caused the large increase in the sum of the total assessment.

The total cost per square mile was slightly less than last year, but the cost per cent. of the assessment increased from Rs. 3·98 to Rs. 4·27. The pay of the Superintendent, Kyauksè, was not included last year in the figures of total cost. Figures for Myingyan and Yamèthin were omitted from last year's calculations. The small assessment in Yamèthin, and the fall in the assessments in Minbu and Meiktila show a consequent increase in the percentage of cost. The figures in column 11, total combined cost per square mile, given for Tharrawaddy last year were erroneous. The figures should have been Rs. 29, not Rs. 19. Other causes which contributed to the cost, which the extension of area operated over would have under ordinary circumstances reduced, were increase in establishments, entertainment of special establishments, and increase under the head "Contingencies."

Submission of assessment-rolls.

8. Assessment-rolls were generally submitted punctually. In Rangoon Town, the completion of some rolls was retarded by extra work in the preparation and submission of estimates in connection with various public schemes. The collection of revenue, however, was made within the prescribed time. In Pegu, demarcation of grazing grounds in Bawni circle caused a delay of two weeks in the submission of the rolls. In Henzada, thugyis and surveyors in 14 circles were punished for late submission. In Pantanaw township of Myaungmya district, owing to the large number of remission cases, the rolls were kept open until the end of February. Four circles of Mergui district were late, in two of which the surveyors were removed from their appointments. In Minbu, the large number of revenue remission cases accounted for a delay in the submission of the *kaukgyi* assessment-rolls. In Mandalay, it was found impossible, in spite of every effort, to get the rolls for the different seasons in by the prescribed date. The *mayin* rolls were late in 24 surveyors' charges. Field operations for the *mayin* assessment began about 15th April, and finished about 15th May. Maps and registers had to be set aside, however, to enable the establishment to prepare and complete the supplementary survey records of the year previous, and collect therefrom the necessary statistics for the Season and Crop Report, as well as for the report on the working of the Land Records Department. The time of the surveyors was thus occupied till about the end of June. The rolls are due on 1st July. The second harvest of the year, the early wet-weather or *kaukti* paddy harvest, followed immediately. Field work engaged the establishment until 25th August. Heavy work was involved by the submersion of the *kaukti* crop in the Shwetachaung tract. The rolls are due on 1st September. Thirteen surveyors submitted their rolls in time; the rest were from 5 to 15 days late. The *kaukgyi* or late wet-weather paddy season began about the end of October and continued till 20th January. Three circles only were late in the submission of their rolls, and that only by a few days. Following without a break the *kaukgyi* season, came *kaing-ya* crop. Operations for this harvest continued until the end of March. Considerable areas required resurvey. The increase in the revenue assessment was nearly Rs. 40,000 on last year. The rolls are due on 1st April. All the rolls were in before the end of April, with the exception of those of one circle which had to be entirely re-surveyed.

The above sketch of the conditions which obtained in Mandalay gives some idea of the pressure at which, both in field and in office, in the four seasons, the Supplementary Survey Staff in districts of Upper Burma have throughout the year to work. As remarked in last year's report "in Upper Burma generally * * it seems to be a physical impossibility for the Land Records Staff under the present system to submit the assessment rolls by the fixed date." In Lower Chindwin the heavy assessments and the extensive areas assigned to each surveyor chiefly accounted for a delay of six weeks to two months in the submission of rolls. In Myingyan the rolls for all four seasons were submitted in due time. The *kaukgyi* rolls were all in by 15th January, the prescribed date, and this, notwithstanding

that 849 *kwins* were visited a second time for the purpose of marking crop-failures. The Commissioner remarks "the work was very creditable to the whole staff. "But it is obvious that men cannot work year after year at such high pressure."

Offices and record-rooms.

9. The register of transfers and changes (Register No. IX in Lower Burma, No. VIII in Upper Burma) has been on the whole fairly well kept up, an shows an improvement on last year. In Thôngwa, 3,586 transfers of landed property covering an area of 66,550 acres were recorded by thugyis and revenue surveyors. Mandalay also shows a large increase in the number of changes reported. Hitherto land holders were in the habit of reporting only sales and mortgages. This year insistence was laid on the necessity for the report of changes in tenancies. Difficulty is still in many districts experienced in impressing the people with the convenience and necessity of promptly reporting all transfers and changes. At present they are inclined to report only changes of ownership. The practice of reporting mortgages as sales, usually by agreement between mortgagor and mortgagee, still continues.

Revenue surveyors' and thugyis' offices were thoroughly inspected and found generally in good order. Government articles are kept in tin-lined almirahs under lock and key. In most districts separate rooms are set apart for offices. In Bassein it is reported that in some cases separate accommodation has not been arranged for the custody of records and Government property. This defect should be remedied. The offices of three circles in Myaungmya were found in indifferent order. In Toungoo more than half the surveyors have by now built houses and provided office accommodation. In Thatôn a few thugyis were found indifferent to the state of their offices. In Kyauksè many of the buildings used for offices are reported as far from suitable. An improvement is being effected. In Meiktila offices for Inspectors have not yet been provided, but alterations in the courthouses at Thazi, Wundwin and Mahlaing, providing for them, have been sanctioned and will be taken in hand during the current year. The Commissioner writes: "These were delayed for over two years by the Public Works Department." In Yamèthin revenue surveyors have hitherto carried on recess work at District Headquarters. After the first year of the introduction of settlement rates and of the assessment based thereon, they should be required to reside within their charges. In Thôngwa, the cyclone in May damaged a few records in the offices of two revenue surveyors. In Bassein, in one office, some settlement and supplementary survey offices were found partly eaten by white ants. In Henzada, a thugyi was punished for the loss of two *kwin* sheets. In Toungoo, two *kwin* maps were lost in a fire in a village headman's house. In Minbu, one surveyor's office and house were burnt down in a village fire. All records were saved but his instruments were lost. In Sagaing, three disastrous fires, one at Ngazun village, one at Kandaw, and one in Sagaing, did considerable damage to Government property and records as well as to private property. The Deputy Commissioner has ordered that all surveyors and Inspectors at headquarters of townships and subdivisions shall carry on their work at the office of the Township or Subdivisional Officer. In Meiktila, the maps and registers of one surveyor were destroyed in a house fire.

The Director, officiating Director and Assistant Director inspected 27 District offices and record-rooms. They were found generally in good order. In Akyab, there is not sufficient accommodation for the records. The office was found to be in bad order. Here, as in some other districts, the instructions regarding apprentices contained in Land Records Circular 2 of 1898 had been disregarded. Superintendents should see that, as a general rule, apprentices receive the prescribed qualification certificate before they are put on to independent paid work. In Kyaukpyu also the record-room does not provide sufficient accommodation for a proper arrangement of records. In Pegu, Myaungmya, Tavoy, Mergui, Minbu, Sagaing, Yamèthin and Myingyan, the re-arrangement of record-rooms in accordance with the District Office Manual and with the instructions of inspecting officers, should be expedited. In Kyaukpyu, Pegu, Prome, Tharrawaddy, Henzada and Toungoo, the District offices were found to be in only fair order. In the

Minbu record-room the brackets fitted by the Public Works Department are not of uniform size, and most of them are too small for the 7″ tubes. An exchange with 6″ and 6½″ tubes from Thayetmyo will be made. The Magwe record-room falls far short of sufficient accommodation. Re-arrangement is necessary, and the changes proposed should be put into execution by the Public Works Department as soon as possible. In Mandalay the record-room has been lately enlarged. Accommodation is now ample. The office was found to be in very good order. During the year papers and files were sorted into A, B and C classes by the Superintendent and dealt with in accordance with the provisions of the District Office Manual. The late head clerk of the office had for some months, by a clever system of forgery and fraud, been embezzling sums of Government money. He was prosecuted and convicted. Irregularities in the levy of copying fees in the Town Lands office, Mandalay, were brought to light by the probationer in charge. Both offices have now been set on a satisfactory and secure working basis. The record-room in Shwebo is reported by the Commissioner to want "thorough overhauling."

Maintenance of the survey.

10. In Shwebo, where settlement operations have been in progress, the Land Records Staff have brought up to date the original cadastral survey extending over an area of 1,054 square miles; the extensions mapped aggregated an area of 84 square miles. The completed maps were utilized by the Settlement Party for their land classification and other work. In Prome an area of 39,946 acres was revised by the local staff, and there is still an area of 69,875 acres which has to be re-surveyed and which it is proposed to deal with next year by special agency as the ordinary Land Records establishment is unable unaided to maintain the survey. In Thôngwa, where the annual increase in cultivation is considerable and changes in field boundaries of new land are constant and numerous, the local surveyors revised the survey of 27,328 acres. There are extensive re-surveys to be undertaken next season, in preparation for re-settlement, by a special staff working under the Superintendent. An area of 19,954 acres was revised in Myaungmya by the local staff. Besides the re-surveys done by a special establishment in Toungoo, the local surveyors re-surveyed 14,303 acres; and it is reported that there are still 41 square miles which require revision, most of the *kwins* having been entirely jungle when the original survey was made. In Hanthawaddy an area of 15,500 acres was revised by the Land Records surveyors, and in Tharrawaddy similarly 18,357 acres, which included flooded *kwins* in which extensions and *pottas* are numerous and in which *kazins* have not yet become permanent. In Amherst 12,215 acres were revised in survey. There are still 45 square miles said to require re-survey before re-settlement. Special attention is being given to this matter and when the re-survey is found to be necessitated through the neglect of circle thugyis, they will be required to meet the cost, in whole or part, of the special staff that may be required for the work. Smaller areas of 8,737 acres in Yamèthin, 5,968 acres in Mandalay, 6,018 acres in Thatôn, 2,768 acres in Bassein, 1,039 acres in Tavoy, and 51 acres in Kyaukpyu were also re-surveyed by the local surveyors at no extra cost. The total area now reported as requiring re-survey is put at 2,069 square miles, more than one-half of which lies in Thôngwa district. Pegu, Tharrawaddy, Prome and Henzada show in each case over 100 square miles needing revision and for these perhaps additional help will be required. Extensions of cultivation in these districts have been heavy and field boundaries are constantly changing, especially in low-lying and flooded tracts. In portions of Henzada re-surveys become necessary almost annually owing to constant changes caused by heavy floods from the Irrawaddy and Ngawun rivers in tracts unprotected by embankments. In 10 other districts revisions are stated to be necessary but the areas in these are limited and capable of being dealt with by the local staffs. The various revisions executed in the year were adequately checked by the Superintendents and Inspectors of Land Records and are reported to have been efficiently done. In Hanthawaddy, however, the re-survey of an entire *kwin* checked by the Assistant Director was found so defective that it had to be redone. In Magwe an area of 19,297 acres was re-surveyed by the Land Records staff. The revisions were due to large extensions of cultivation and to the cutting of several new canals since the date of the original survey.

Preservation of permanent survey marks.

11. District reports favour an inference that more attention than formerly is being paid by thugyis and headmen to the preservation of permanent marks. There is of course much room for improvement, but systematic punishment for neglect of duty in this respect should in course of time have an appreciable effect. All thugyis and headmen have been or are being supplied with maps showing the position of every permanent mark in their charge, and an adoption in every district of the plan followed in Thatôn, whereby headmen were shown by surveyors all the marks in their charge and required to sign a receipt for all pipes taken over, would be advisable. The regular submission and checking of reports from headmen should be rigidly insisted on. In Thôngwa one headman was dismissed for submitting false reports, and in Katha 7 thugyis were fined for neglect. In Amherst, preservation has been culpably neglected. Only 72 per cent. of the marks visited during the year by the survey staff were found to be fully protected. Until recently when a re-survey was made and maps prepared, marks in Mergui town had been scandalously neglected. In Minbu, Magwe, Mandalay, Sagaing, Lower Chindwin, Shwebo and Kyauksè an improvement is reported. In Myingyan the marks are reported to be in excellent order, and the thugyis regularly submit reports.

Inspection by surveyors and by the Inspecting staff, and replacement of missing or broken marks were generally sufficient. In Rangoon Town District there was a regrettable but unavoidable loss of 7 stations, of which 5 were theodolite traverse and 2 triangulated stations. Reclamation and excavation of land and the action of the tidal Pazundaung creek occasioned the loss.

Miscellaneous duties.

12. The Inspecting staff checked a sufficient number of tax-tickets and cattle death registers. Instances of fraudulent entries in tax-tickets detected were fewer than in the year previous. In Thôngwa, one headman had tampered with the figures. His case is under enquiry. In Bassein 3 thugyis were reported for falsifying entries, were prosecuted and punished. In Minbu one and in Katha 3 cases of fraud were detected. In Lower Chindwin one case of very serious fraud came to light. The headman was convicted by the District Magistrate and sentenced to 2 years' imprisonment. Excepting the above frauds and a few minor errors, such as omission of name of tenant or mortgagee, of holding areas, or due to careless copying from the registers, tax-tickets were found in order. Cattle death registration by headmen is reported to have been good.

The duties of the survey staff comprised the demarcation of several new grazing-ground reserves, as well as the checking of the demarcation and boundaries of existing reserves, and of *pottas*. In Akyab 17 grazing-grounds covering an area of 2,441 acres were allotted in the course of the year, of which 5 were demarcated, and 12 are in the course of demarcation. The demarcation of existing grazing-grounds was found unsatisfactory and numerous encroachments were detected. The permanent demarcation of *pottas* is also in progress. In Sandoway 10 grazing-grounds were demarcated. In Rangoon Town District over one-third of the total number of permanent boundary marks laid down during the demarcation operations of 1895-97 were visited during the year. One hundred and forty-seven were found missing or broken, and were replaced at the expense of the land-holders. The survey staff were taken off their regular inspection work and called upon to prepare surveys, plans, estimates and reports in connection with reclamation, acquisition and resumption projects which were exceptionally numerous. In Pegu, the Bawni circle thugyi and his assistant did excellent and accurate demarcation of grazing reserves. The Deputy Commissioner personally inspected the demarcation of a large number of grounds. In Tharrawaddy the demarcation of 57 grazing areas was revised by headmen and surveyors. Encroachments were found to be numerous. In Prome an area of 4,786 acres was reserved during the year. In Thôngwa 21 persons were convicted and fined for encroachments. The Commissioner remarks that "Subordinate Magistrates do not inflict heavy enough fines" in cases of conviction for encroach-

ment. An area of 4,374 acres was added to the grazing reserves of Bassein, and demarcation was fully carried out by means of posts instead of pipes which have been found to be unsatisfactory marks. Where necessary masonry pillars are being erected. Altogether 30,968 marks out of a total of 41,804 were visited; 2,902 were reported broken or missing. In all, 297 cases of encroachment were reported. Out of 166 cultivators prosecuted 158 were punished. In Henzada many grazing reserve boundaries were found to be neglected. Headmen were warned and punished. In Myaungmya 3,660 acres were added to the reserves. Fines were inflicted for encroachment in 99 cases. In Toungoo 109 new grazing areas were demarcated. In Amherst it was found that no grazing-grounds were demarcated with posts. Encroachments in Mudôn township have been numerous, one of 84 acres detected by the Superintendent. In Tavoy 29 grazing-grounds were demarcated during the year.

Topographical maps on 1″ or 2″ scale have, when received, been kept up to date. From districts where they have not yet been received application should be made to the Map Issue and Record Office, Calcutta.

In Mandalay the Cantonment house sites and agricultural lands continued under the superintendence of the Superintendent. The total number of houses taxed was 2,599. The revision of rates in the Shwetachaung tracts reported on last year was finally completed after the *mayin* harvest during which crop measurements were made in almost every village. A total number of 895 *potta* surveys comprising 2,029 acres, occasioned by the completion of the Mandalay Canal, distributaries and water-courses, were made and mapped. In Sagaing heavy work devolved on the Land Records staff in the preparation of statements and maps in connection with acquisition of State land for the railway from Sagaing to Alôn. In Shwebo, Inspectors and Surveyors were detailed to work in connection with the acquisition of land for the Shwebo Canal, with the survey and mapping of land for 2 sanitation camps, and with the topographical survey, on the scale of 4″ = 1 mile, of an earth oil grant.

Village headmen scheme.

13. In Akyab the conduct of thugyis, headmen and surveyors was reported as fair. One thugyi was removed from his appointment for absence from his headquarters without permission and for general neglect of duty. One *thugyisaye* was suspended and 3 others are under enquiry for the same misconduct. Progress in introducing the scheme for collection of revenue by village headmen is slow. One more circle was brought under the scheme. Of 18 *thugyisayes* in Kyaukpyu, 3 did very good work. The headman system was only lately introduced. Two circles were broken up into 18 headman charges. In Hanthawaddy headmen with few exceptions did good work. The thugyis as usual evinced but little interest in Land Records work. During the year, the headman system was introduced into one circle, 26 circles under thugyis being left. In Pegu the Bawni and Yitkangyi circle thugyis displayed interest and energy in Land Records work. In Kamase circle, where extensions and changes have been heaviest, the work of the thugyis was bad. Two circles were broken up, and, with one-third of Bawni circle, were placed under village headmen. In Tharrawaddy thugyis worked satisfactorily, while in Prome their work was indifferent. In Bassein, thugyis with one exception took little interest in Supplementary Survey work and failed to supervise the work of their assistants to whom they left everything. Two *thugyisayes* were removed for misconduct. The sanctioned village headman scheme of Henzada is under revision, and will, the Deputy Commissioner writes, be completed before the end of next year. In Myaungmya 4 circles came up for introduction into the headman scheme. In Thatôn the number of circles fell from 28 to 13, and headman charges were substituted. *Thugyisayes* with one exception worked fairly well. In Amherst, one circle thugyi was convicted under section 471, Indian Penal Code, two thugyis were fined for neglect of duty and the rest devoted scant attention to field work. One circle came under the village headman scheme, which is under revision. In Tavoy and Mergui, thugyis and headmen are reported to have, with few exceptions, worked well. In Thayetmyo only one circle thugyi personally took part in Supplementary Survey work. Two circles were broken up into village headman charges.

Conduct of the Supplementary Survey Staff.

14. As mentioned in paragraph 25, Services of officers, all the Superintendents have, with one exception, been well reported upon. Some of the officers who held charge of districts are young and inexperienced, but no serious fault has been found with any one of them. Where there has been failure it has been in the deficiency of close supervision, the importance of which duty cannot be exaggerated.

In Akyab the conduct of revenue surveyors was only fair. One Surveyor was reduced for 3 months and 3 others were called upon to show cause why they should not be punished for bad work. One Inspector and the Head Clerk of the office were placed under suspension for neglect of duty and disobedience of orders. The Superintendent went on two years leave in February 1903 and left to his successor an office in a considerable state of disorder. In Sandoway 2 revenue surveyors and one Inspector were reduced for drunkenness. In Hanthawaddy one revenue surveyor was removed and 2 transferred for unsatisfactory work. In Pegu the quality of the surveyors' work was bad, 13 were severely punished and 1 was removed for falsification of a progress report. Nor are the Inspectors generally well reported upon. In Tharrawaddy 4 surveyors were fined. In Prome, of revenue surveyors and *thugyisayes* 21 were fined and 2 reduced. In Thôngwa one surveyor was reduced for incompetency, 15 were reprimanded for careless work and 2 placed under suspension for erroneous assessment of land. In Bassein one Inspector was punished by temporary grade reduction and one by pay reduction for slackness of supervision in connection with grazing-ground encroachments. Ten surveyors and *thugyisayes* were punished. In Henzada an example was made of one surveyor for bad work. In Myaungmya one Inspector was punished, 3 surveyors were frequently admonished, and 2 were fined. In Toungoo one Inspector is reported to be a failure. One promising Inspector died. In Thatôn one surveyor was placed under a year's suspension. In Amherst 2 Inspectors were fined for late submission of progress reports. One surveyor was convicted under section 161, Indian Penal Code, and 3 were removed. The subordinate staff is said to be below the average of a Lower Burma district. In Mergui 2 surveyors were removed. In Magwe 2 surveyors were fined, 2 reduced and 21 warned for bad work. In Mandalay one Inspector was reduced, and 2 surveyors were temporarily reduced. The Head Clerk of the office was prosecuted criminally for forgery and embezzlement and was convicted. In Katha one surveyor was fined for neglect of permanent survey marks. Most of the surveyors are young and inexperienced, and require close supervision. In Sagaing one Inspector was superseded and one reduced. In Lower Chindwin 2 surveyors were prosecuted for cheating cultivators. In Shwebo one Inspector was reduced to the grade of a surveyor for incompetency and misconduct, 2 surveyors were removed, 2 reduced in grade, and 5 fined for bad field work and 4 for bad recess work. Two irrigation and 2 extension survey surveyors were fined for misbehaviour in office. In Kyauksè 3 surveyors were removed and 3 reduced in grade. In Meiktila 6 surveyors were fined and 11 reprimanded for short work. In Myingyan 2 Inspectors were reduced. One surveyor was removed for bad work and for omission of an area of 52 acres of cultivation from his map and register. One was removed for neglect of duty.

With the exceptions mentioned above, Inspectors and revenue surveyors did good and hard work. In Myingyan, where, under an experimental system introduced with a view to the reduction of revenue remission cases, the surveyors were required to visit many *kwins* a second time in order to check assessments, the surveyors were reported to have, as a whole, behaved excellently. In Meiktila also where the same experimental system is in force, the majority of the surveyors worked hard and well. Three Inspectors were appointed Myoôks in the Subordinate Civil Service.

Inspection of field-work, Statement II.

15. The Director and Assistant Director checked during the year in 101 *kwins* the work of 65 surveyors under 29 Inspectors in 19 districts. In 59 *kwins* the work was found good, in 35 fair, and in 7 poor. Errors detected were in fallow-marking, marking of crop failures, classification of land, survey, holding-

marking, tenant, sale and mortgage statistics. Permanent survey marks were found insufficiently protected. The field-work was worst in Akyab and Amherst, where numerous statistical and survey errors and omissions of cultivated areas were discovered.

The Financial Commissioner inspected the offices of Minbu, Katha, Meiktila, Yamèthin and Thayetmyo, and 2 *kwins* of Meiktila. Prome, Kyauksè, Sandoway and Akyab offices were inspected by Commissioners, and the Commissioner of Arakan Division inspected also the field-work of 3 *kwins* in Sandoway and Akyab. The former he found satisfactory, the latter poor.

The Deputy Commissioners of Hanthawaddy (Mr. Thurston), Pegu (Mr. Christie), Thatôn (Mr. Stone), Minbu (Mr. Parry) and Kyauksè (Major Aplin) did numerous and useful inspections. In the number of total inspections during the year, there has been a considerable decrease on last year in those by District Officers, and a considerable increase in the number by the Land Records staff. The decrease in District Officers' inspections was in many districts attributed to an increase in the number of revenue remission cases. It would often be possible, however, to combine a *kwin* inspection with a visit in connection with remission. In Akyab, the Subdivisional Officer of Kaladan, Maung Hla Paw Zan, did 16 good inspections. The Subdivisional Officer of Rathedaung and Township Officer of Kaladan did no inspection. The Township Officers of Myohaung and Urittaung did only 2 each. The Commissioner has called upon them for an explanation. In Kyaukpyu only one Township Officer, Maung Kyaw Zan U of Myebôn, did any inspection. The Commissioner remarks that there is no excuse for the Cheduba Myoôk who has light work. In Hanthawaddy Subdivisional and Township Officers did numerous inspections. In Pegu the Township Officer of Hlègu cannot be excused for his failure to inspect. The inspections by the Township Officer of Kawa were thorough. The Deputy Commissioner in his inspections found serious errors in Ananbaw circle where 20 to 30 acres of land under cultivation had been omitted, and in Kamase and Payagyi circles. The Commissioner comments on neglect of work following on lack of supervision. But, on the other hand, work in Pegu district with the numerous extensions, changes, *potta* surveys, cadastral and traverse, revision, fishery, forest and town surveys, was exceptionally heavy. In Thôngwa the Subdivisional Officers did sufficient inspection. Maung Aung Zan's, Subdivisional Officer of Pyapôn, inspections fell below his average owing to his absence at the Delhi Durbar and to press of other work. Frequent changes of Township Officers interfered with inspections. In Bassein, to heavy revenue and judicial work is attributed the decrease in inspections by Subdivisional and Township Officers. Mr. Grant, Subdivisional Officer, Ngathainggyaung, and Township Officers Maung Kala and Maung Shwe Tha, however, did good work. In Henzada Maung Tin Gyaw, Subdivisional Officer, in spite of his absence at the Delhi Durbar, maintained the high average quantity and quality of his inspections, while Township Officers Maung Po Kyu, Maung Po Thu Daw and Maung Ôn Gaing of Zalun did good inspection work. In Myaungmya Mr. Birrell, Subdivisional Officer, Wakèma, made thorough inspections, and Maung Po Bye displayed his usual energy. Other officers mentioned for good inspection work were, in Toungoo, Mr. Pascal and Township Officers, Maung Ba Kyaw and Maung Po Byu; in Thatôn Mr. Ross, the Subdivisional Officer, Pa-an, and Township Officer Maung E Maung; in Amherst the Subdivisional Officer of Amherst and Township Officer of Chaungzôn; in Tavoy Township Officers Maung Po Min, Maung Myat Thin and Maung Ba Thein; in Mergui Township Officer, Mr. Bell; in Thayetmyo Mr. Buchanan; in Minbu Mr. Dunn; in Mandalay the Subdivisional Officer, Amarapura, and Township Officer Madaya; in Katha Township Officer Maung Kyaw; in Kyauksè Subdivisional Officer Maung Po and all District Officers; in Meiktila Subdivisional Officers Maung Nyo and Maung Me, and Township Officers Maung Chit Kaing and Maung Paw Nyein; in Myingyan the Township Officers of Myingyan and Pagan. The following officers among others neglected their duty:—in Amherst the Subdivisional Officer, Kawkareik, Township Officers of Kawkareik, Mudôn, Moulmein, Kyaikmaraw and Ye; in Mergui all Township Officers excepting Mr. Bell; in Thayetmyo the Subdivisional Officer, Myede; in Minbu the Subdivisional Officer, Minbu, and Township Officers, Sagu, Ngapè

and Sidôktaya; in Meiktila the Township Officers of Meiktila and Mahlaing; in Myingyan the Subdivisional Officer, Myingyan. Inspections by the Superintendent in Akyab show a decrease on last year of 57 *kwins*. This decrease was due to the Superintendent's ill health during November, December, January and February. The Probationer who succeeded him did 38 thorough inspections in March, April and the first week of May. The Kaladan Inspector was very slack. Owing to the heavy extra work in Pegu, the number of inspections by the Superintendent and by Inspectors fell. In Prome a decrease is attributable to the revision surveys, and in Bassein to the demarcation and survey of grazing-grounds. In Henzada, inspections show a commendable increase on last year, and the quality of the surveyor's work was found to have improved. In spite of the revision and special surveys in Myaungmya and of the addition of 76 square miles to the area under supplementary survey, the number of inspections by Inspectors rose by 14. The Thigwin Inspector was especially energetic and painstaking. In Amherst the Superintendent checked 77 *kwins* as against 44 last year. The Mudôn Inspector fell ill in January. Inspection in distant *kwins* was not sufficient. In Tavoy and especially in Mergui inspections were impeded by numerous odd surveys and miscellaneous work on to which the Superintendent and his staff were put. The late Superintendent of Mergui had inspected only 8 *kwins* when he gave over charge in February. The probationer in Thayetmyo did inadequate inspection. In Mandalay the Madaya Inspector was lazy and brought down the average of inspections. The quality of inspections was an improvement on last year. In Kyauksè the Superintendent, in addition to checking field-to-field revision survey work in 29 *kwins*, did 36 inspections more than were done in the year previous. Out of 23,064 holdings checked, 1,325 cultivated fields were shown as fallows, 386 fallows shown as cultivated, 143 acres were left unassessed and 55 acres wrongly assessed. In Meiktila there was a large and commendable increase in the number of inspections, and the work of the surveyors was found to be good. In Myingyan the field-work was reported to be excellent, very few errors affecting assessment being discovered.

Generally, the chief errors detected in inspection were omission to survey extensions, especially in distant *kwins*, in crop-marking, in marking of fallows, and in statistics of tenants, sales and mortgages. The errors in fallow-marking are serious. Cropped fields aggregating considerable areas have been found shown as fallows, and fallow fields have been shown as cropped. Superintendents and Inspectors are to pay special attention to this form of error which is generally the result of carelessness but occasionally of dishonesty.

Training of Civil Officers in Survey and Land Records work.

16. Seven Assistant Commissioners qualified in Survey and Land Records work in the year, and two others are still under training. Six of the number fully trained did well at the test examination. One Extra Assistant Commissioner and 24 Myoôks, also, received instruction, all of whom passed the prescribed test, 13 with credit. It would be well, if possible, in future postings, to limit the number of officers for training in a district to two, and that during the months of November to February only.

Survey Schools, Statement III.

17. There are now 18 Government Survey Schools in the Province, or a decrease of 3 as compared with last year. All of these are accommodated in Government buildings except 5 for which private houses are rented. The School session commences on the 1st May and lasts for 12 months. The total number of pupils on the rolls of the Schools on the 31st March was 509, of whom 29 per cent. were exempted from the payment of the School fee. There was a marked falling off in numbers in Ma-ubin and Mandalay, and in Toungoo and Katha there was a large increase. The average number of pupils on the rolls monthly was 512. The attendance at Class was indifferent in Minbu, in 6 other schools fair, elsewhere regular. It was found that in 7 schools the number of pupils was beyond the scope of adequate instruction and supervision by one teacher. The number of pupils attending a school has been limited to 35. Scholarships are intended for poor students of the agricultural classes and more especially the blood relations of thugyis and village headmen. They should not be

allotted, as was done in Ma-ubin, to traders' sons. In Katha particular care has to be exercised in giving out these awards in order to attract boys from the outlying unhealthy parts of the district where unacclimatised surveyors constantly fall ill. Money prizes, in small sums, to the extent of Rs. 610, were given to all schools, on the result of a test examination and on the condition of continuous attendance for 6 months. Of the total number of pupils no less than one-third were sons of traders, chiefly in Akyab, Insein, Pegu, Bassein, Toungoo and Minbu, while the rest were the sons of agriculturists or village headmen and thugyis. There were, in all, 50 pupils, chiefly in Prome, Bassein and Pakôkku, who had passed the VIIth standard examination. In only 2 schools there were no boys possessng this qualification. Passed students offer themselves in greater number now, though not nearly to the extent of the passes for training in Land Records work, with a view to obtaining a certificate of qualification fitting them for employment as revenue surveyor or *thugyisaye*. The demand for surveyors at some centres is so great, as in Katha, Mandalay, Sagaing and the Lower Chindwin, that passed students receive appointments on passing the Syndicate examinations without undergoing a special training as Apprentices under qualified surveyors. Several certificated men received permanent work but most were given employment in temporary capacities on Revision, *potta* and special surveys, and in Settlement parties. On the whole the supply of surveyors is equal to the demand. So long as schools continue to be well attended, the inference is that men with survey attainments are required and the existence of the schools is justified. The total expenditure incurred in the maintenance of schools amounted to Rs. 38,856, while the total income from fees and other sources came to Rs. 6,920. This gives a nett cost of Rs. 31,936, which works out to Rs. 62 per pupil, precisely the same figure as for the previous year. The admission tests for the schools in Upper Burma, where education has not yet reached the standard attained in Lower Burma is comparatively easy and boys on entering have frequently to be further grounded in arithmetic before they can follow the prescribed school course. During the year changes in the school curricula have been introduced. The effects will be apparent next session, at the end of which a special report on the working of the altered rules is to be submitted to Government. The admission test will now be insisted on only from candidates who have not already passed the IVth in Upper Burma and VIth in Lower Burma or higher standard of examination, while in addition, in Lower Burma, the production of a IVth standard qualification certificate is made compulsory. The course of study will now, in addition to surveying, include the subjects of Revenue Law and Arithmetic up to the standards prescribed in the new Rules for the appointment of Subordinate Revenue and Land Records Officers. At the Syndicate examination of April 1903 the number of candidates from Government Survey Schools who succeeded in passing in Surveying, Revenue Law and Arithmetic were, respectively, 301, 176 and 92, or 71 per cent., 43 per cent. and 22 per cent. of the total number presented in each of these subjects. The results of the examination in surveying were highly satisfactory; they were also good in Revenue Law, showing a considerable improvement on last year; in Arithmetic the results were disappointing. The schools that did particularly well in surveying were Insein, Bassein and Prome. Judged by the percentages of passes the following schools did very well, namely, Akyab, Ma-ubin, Henzada, Moulmein, Katha, Sagaing and Meiktila. The Kyaukpyu and Mandalay Schools were unfortunate. The 'Clancey' medal for proficiency in surveying was again won by a pupil of the Prome School. The school is to be congratulated on this achievement. The centres for examination have now been reduced by the Syndicate to the headquarters of divisions alone, 8 in number. All the Teachers with the exception of 4 have worked zealously and well. Those of Pakôkku, Mandalay and Yamèthin were slack, and the one at Minbu, who has a previous bad record, is adversely reported upon. The Superintendents paid frequent visits to the schools and took an interest in the progress of the pupils. The work of the supervision of the school at Pakôkku, where no Superintendent of Land Records is stationed, devolves upon the Deputy Commissioner alone. All schools excepting Insein and Bassein were inspected by the Director or Assistant Director. The pupils were examined

in all but 2 cases in their indoor studies and in all but 6 instances in field-work. In Toungoo the book-work was poor, and in the field, offsets were carelessly measured. In Minbu, also, the offsets were carelessly taken and the boys needed more detailed instruction. In Mandalay, Prome and Minbu the mapping was of poor quality. In Henzada the work was good, but untidy. In Kyaukpyu drawing receives particular attention, and in Akyab the boys were well instructed and practiced in field-work. The results taken all round were good and reflected credit on both Teachers and Superintendents. The condition of the schools is, on the whole, satisfactory and nearly all were well attended.

SECTION II.

Agriculture.

Collection of Economic Products.

18. The work of collection of economic products for the Indian Museum, Calcutta, and the Imperial Institute, London, of various information and specimens for the offices of the Inspector-General of Agriculture, the Analyst and the Entomologist to the Government of India in connection with agriculture, manures, destructive insects, &c., and also that of experimental cultivation and the conduct of Agricultural shows in the Province, impose heavy work in the office, and only recently has an extra clerk been sanctioned to assist in these particular duties. During the year specimens of a large number of botanical products were obtained chiefly through District Officers, and in exceptional cases through Forest Officers, and forwarded with brief accounts relating to the same to the Reporter on Economic Products to the Government of India. The subject of timbers is now left entirely to the Forest Department to arrange direct with the Reporter. The following is a brief summary of the principal collections on the lines of the Programmes furnished by the Reporter for the year 1902-03, in relation to gums, dyes, oils, fibres, medicinal products, food substances, and the like, as also to animal products and industries. A few of these are in continuation of the subjects denoted in last year's report, but the majority are new subjects, including such as have emanated through this office or that of the Inspector-General of Agriculture in India. Of the subjects dealt with before, further specimens of the following were sent to the Reporter, namely,—*Chrysophyllum Roxburghü* (star apple) from Pegu and Akyab; *Crustacea* from Thôngwa, Tavoy and Thatôn; *Taraktogenos Kurzü*, the *Chaulmugra* of Burma (Burmese "Kalaw") from the Rangoon and Myittha Forest divisions; *Cypherus Corymbosus* from Hanthawaddy, Henzada and Pegu; *Cypherus Haspan* (Burmese 'Nwa-myet-yin') from Prome; *Clinogyne dichotoma* (Burmese 'Thin-bin') from Thôngwa and Thatôn; including sample mats, &c., manufactured from these several species of sedges; and *Edgeworthia Gardneri* ('Tat-Phan') from Myitkyina. This last-named product is used for the manufacture of paper in Bhamo and for making posts in homesteads. In respect to the new subjects, many products could not, owing to the absence of the vernacular name, be identified and were thus not procured. Those that were found, and of which specimens were transmitted to the Reporter are *Connarus speciosus* from Pegu and *Cryptostegia grandiflora* (Burmese 'Gwedauk'), described as an inferior rubber plant, from Toungoo; *Diospyrus Chloroxylon* used for dying, from Meiktila; *Citrus Medica* (Limetta, sweet lime, Burmese 'Thanbaya') from Tavoy, Pegu and Amherst; *Capsicum Aunum* (Red pepper) from Meiktila; *Carapa Moluccensis* (Burmese 'Pinle-lôn) from Tavoy; *Cleodendron Infortematum* (Burmese 'Ko-aung-gyi') from Tavoy and Amherst; *Cinnamonum Tamala* (Burmese 'Thit-kya-bo') *Cinnamonum Iners* (Burmese 'Ngalingyaw') and *Cinnamonum Partherioxylon* (Burmese 'Karawe') from Tavoy; *Cinnamonum obtusifolium* (Burmese 'Lulingyaw') from Tavoy and Tharrawaddy; *Careya Arborea* (Burmese 'Bambwe') from Pegu and Sandoway; *Crinum Pratense* (Burmese 'Padaing') from Toungoo, Prome and Tharrawaddy; *Cedrela Toonar* (Burmese 'Thitkado') from Tavoy and Thatôn; *Allaeanthus Kurzü* a mulbery tree from Bhamo; *Celastrus Paniculata* (Burmese 'Myinkaungnayaung') from Prome and Bhamo; and *Clerodendron inerme* (Burmese 'Kya-yet-thin'), an indigenous plant sent from Kyaukpyu but which has not been properly identified yet by the Reporter. Both the sour and sweet varieties of the *Baccaurea Sapida* (Burmese 'Kanazo') and *Bonea Burmanica* (Burmese 'Mayan') were obtained,

the former from Rangoon, Henzada and Moulmein, and the latter from Tavoy, Moulmein and Thatôn. The sour fruits are said to turn sweet on the opening showers of the rains and are preferred to the sweet kind. The Reporter on Economic Products proposes to take up the study of these two subjects and issue an Agricultural Ledger on them. A species of bamboo called *Denorocalmus strictus* (Burmese 'Myinwa') was procured from Prome and Thatôn and sent with a descriptive note on its habitat, use, &c., written by the Assistant Director. Samples of *Blumea Balsamifera and Densiflora*, a wild camphor tree, were sent from the Northern and Southern Shan States with a note on the method of manufacturing camphor by the Superintendent of the former States. Bazaar samples of *Lathyrus Sativus* known in India as 'Khessary dall' and in Burma as 'Pechinbaung' or 'Pe-nauk' were got from Mandalay, Prome, Pakôkku, Thôngwa, Sagaing and Kyauksè. The pulse is only cultivated in the districts named and in but small quantities, and is chiefly used as fodder for cattle. The pea is considered indigestible and eaten by the poorest classes chiefly in time of need. It is easily grown and often used to adulterate 'dal' proper from which it can scarcely be distinguished. Preserved specimens, in their fresh and dried state, of 3 species of Edible Frogs (Burmese 'Sa-hpa') which are eaten by the Burmese were procured and forwarded. These were (i) the green frog (Burmese 'Hpa-zaing') the mottled frog (Burmese 'Hpa-aing') and the spangled frog (Burmese 'Hpabaungzin'), obtained from Rangoon, Tavoy, Toungoo and Pegu. Further specimens of these and of some other varieties, *e.g.*, ('Hpa-baung-she,' 'Hpa-ladet,' 'Hpa-byôk') are being procured. There are 2 kinds of frogs, known as the flying-frog (Burmese 'Hpa-byan') and a roundish-frog, in appearance like the seed of the *Entada Scandens* (Burmese 'Gônnyin'), to be found during the rains in Tavoy and Mergui, and also a very small species (Burmese 'Hpa-kyaw-zan-kè') seen in paddy fields in Prome which are eaten roasted. An interesting note on the Edible Frogs of Burma, written by the Assistant Director, describing the species and the uses to which they are put, was sent with the specimens. A very full note on Pearls and Pearl Fisheries, with a description of the industry in the Mergui Archipelago, was sent by the Deputy Commissioner (Mr. Grant-Brown) of Mergui. On the subject of sheep and goats, much information could not be supplied. Kachins in Bhamo district use the wool of locally bred sheep in the manufacture of their garments. In Sagaing and Myitkyina there is no trade in wool or tallow. These commodities are said to be largely produced in Têngyüeh (China), a week's journey from Myitkyina, whence raw wool is exported to the Kachin hills, but does not reach Myitkyina. The chief use to which the wool is put is in the manufacture of rugs and water-proof coats.

19. *Indian Art Exhibition, Delhi, January 1903.*—A special officer was deputed to the Exhibition, in charge of seven artisans from Rangoon, Moulmein and Pagan, master craftsmen in silver, wood-carving and lacquer work. The industries represented by exhibits were silver work, wood and ivory carving, glass mosaic, bronze statuary, gilt and colored lacquer ware, niello work, appliquè curtains and screens, and embroidery. Seventeen prizes in all, of which 5 were first prizes, were won by exhibitors from Rangoon, Moulmein, Prome, Mandalay, Pagan and Toungoo. Three gold, 8 silver and 5 bronze medals were also awarded. All prizes carried certificates.

Art Exhibitions.

Prior to the exhibition Sir George Watt, Director of the Exhibition, and his assistant visited Rangoon, Mandalay, Pagan and Prome, and left a number of orders for execution.

Provincial Art Handicraft competition.—The third exhibition since the revival of the art competitions was held in Rangoon in November 1902. The number of exhibits as a whole was small but the quality, especially in taste of design, was considered an advance on the exhibits of last year. The Burman artisan revels in detail which is apt to become too exuberant, overdone and oppressive. The silver work was of a very high standard. A silver cup with pointed cover, exhibited by Maung Yin Maung of Rangoon, won a first prize with gold medal at the Delhi Exhibition. Statuettes in silver bronze and wood, and some pieces of wood and ivory carving were noticeable. The exhibits of glass mosaic and *Kalaga* work were poor.

Agricultural Shows.

20. During the year Agricultural Shows were held as in the year previous at Kyônpyaw, Bassein district, Letpadan, Tharrawaddy district and Sagu, Minbu district. A projected show at Bhamo, to be held with a view to encouraging transfrontier trade and the importation of a better class of live-stock, had, owing to the lateness of the fixture and to some misapprehension as to the nature and conditions of the show, to be abandoned. It will, however, take place this year 1903-04. A Pony and Cattle Show was for the first time held at Fort Stedman in the Southern Shan States and a Horse Show in Rangoon, both of which shows were assisted by a Government grant.

Kyônpyaw Show.—Such measure of success as this show achieved was due to the energy and interest displayed by Mr. Grant, Subdivisional Officer of Ngathainggyaung. He was handicapped by the absence of Maung Tin Gyaw, Subdivisional Officer of the adjoining subdivision of Henzada, who was at the time on deputation to the Delhi Durbar, an officer who has always rendered energetic and valuable assistance. The Commissioner of the Irrawaddy Division writes that "Both Subdivisional Officers and Township Officers should be required to take "a greater interest in the show than they displayed on this occasion, and a whip "should also be sent round to headmen of large and well-to-do charges to lend "their assistance in promoting the show." Maung Po Kyu, Township Officer of Lemyethna, who takes an active interest in the show, was unfortunately absent on Forest Settlement deputation. Maung Taw, Township Officer of Henzada took over a good number of exhibits and won several prizes. Of circle thugyis, Maung Chan of Thaung circle was specially commended for hard work and assistance rendered. The nature of the show has not yet been fully grasped by the people. It is desired to approximate it as much as possible to a country fair. *Pwès* and other amusements will, it is hoped, be this year provided for the entertainment of visitors, and prizes will be of higher value. Entries for the oxen and buffalo bull classes were excellent, but a poor exhibition of cows with calf and milch cows was made. There were few entries of fruits and garden produce, and for the industries class, and the quality, except in cheroot rolling, was not remarkable. Generally, the exhibits were of a better quality than last year, but the area from which they were drawn was more limited. An insufficiency in the supply of fodder the year previous is reported to have kept away many exhibitors, but at the last show this defect was remedied and the general arrangements were better. The Bassein rice millers contributed Rs. 450 towards the fund of the show.

The *Letpadan Show* was very well managed. The local committee worked energetically. Voluntary subscrptions were numerous. Attendance by all classes of people was double that of the previous year, and the number of exhibits was 4 times larger. Great credit was due to the local committee and to the Subdivisional and Township Officers, especially to Maung Ba Hlaing, Township Officer of Letpadan, with whom Maung Lu Gale, Municipal Secretary, and Mr. Gaudoin, Resident Excise Officer, energetically co-operated. Two silver cups were presented by private Burmese gentlemen. The entries in the plough oxen class were numerous and of high quality. Selection for awards was difficult. Agricultural products also were well represented. It is hoped that this year more exhibits will be brought in from neighbouring districts.

Sagu.—The show was more successful than in the year previous. Visitors and exhibitors were more numerous. Exhibits were of better quality and competition more keen. The Commissioner, Minbu Division, writes: "Ponies were dis- "appointing on the whole, some tolerable colts from the Government stallion." Some buffaloes were specially remarkable.

Fort Stedman.—Pony and cattle show. The notice of this show was advertised only about a month before the show was held, and consequently the Shan and Burman population were not largely represented. Chiefs from adjacent Shan States and officers of the Burma Battalion stationed at Fort Stedman attended. Rupees 205 were locally subscribed. From an agricultural point of view, the show was not a success. Shans and Burmans received only Rs. 142 out of the total prize money of Rs. 394, exhibitors other than Shan or Burman receiving the remainder. Ponies and milch cows exhibited were on the whole of good class.

Buffaloes were of indifferent size. The show was held to warrant another trial; and this year longer notice will be given, the show will be held at the more central station of Taunggyi, prominent Shans will be included in the committee, and programmes printed in Shan will be widely distributed.

The *Rangoon Horse Show* was essentially a station show. It was held at a time of year when reaping or harvesting of paddy were in operation. There were very few entries in the cattle class. It is thought advisable to eliminate this class from future shows. The pony exhibition was mainly one of Indo-Burmans.

Veterinary-Major Evans assisted at the Kyônpyaw show and Mr. Rennie, second Superintendent of the Civil Veterinary Department, at the Letpadan and Sagu shows.

Among the prizes awarded at the Kyônpyaw, Sagu and Letpadan shows were some agricultural ploughs of exotic pattern and make. These have not found favour with the cultivators, are said to be too light, and are lying in disuse.

Cost to Government.—The Civil Veterinary department of the Government of India gave, as last year, a grant of Rs. 1,000 to be awarded to *bonâ-fide* agriculturists with a view to the encouragement of cattle breeding. This grant was divided between the Kyônpyaw, Letpadan and Sagu Shows. Inclusive of these allotments, the total cost to Government of the shows held last year was as follows:—

	Provincial grant.	Government of India grant.	Total cost.
	Rs.	Rs.	Rs.
Kyônpyaw	878	320	1,198
Letpadan	1,030	270	1,300
Sagu	986	270	1,256
Fort Stedman	486	...	486
Rangoon	1,050	...	1,050
Total ...	4,430	860	5,290

Agricultural implements.

21. The following ploughs were obtained from the Cawnpore Experimental farm for experimental purposes and for Exhibit at Agricultural Shows, namely, 4 Watts' chain, 6 Baldeo and 3 Meston. These were exhibited at the Agricultural Shows and given as additional prizes to cultivators who were most successful in the plough and harrow class. They were received with little enthusiasm and have not been put to any use. At the request of the Deputy Commissioner, Prome, a sample "Ku" or trough lift which is used for irrigating small areas of paddy land in Upper Burma districts was obtained for him from Minbu with a view to introducing the machine in portions of the Paungdè subdivision where there are said to be facilities for irrigation.

Experimental gardens, Statement IV.

22. There are 5 experimental gardens kept up at Government expense. Reports of the working of these for the year under review are given in Appendix II. The nett cost, deducting receipts from the sale of products from the total expenditure amounted to Rs. 8,615. The Taunggyi garden realizes most from the sale of its fruits and young trees; none are paying concerns. Three probationers trained in it received certificates of fitness as gardeners and are now in employment with Chiefs in the States. The Katha garden was visited by His Honour the Lieutenant-Governor and by the Financial Commissioner who recorded a very favourable note on its working. The total expenditure, exclusive of receipts from sale of products, incurred in the year on account of all experimental cultivation, inclusive of the 5 Government experimental gardens referred to and of the distributions of seeds and agricultural implements from headquarters, amounted to Rs. 10,764.

Experimental cultivation.

23. *Tobacco* (*nicotiana tabacum*).—Altogether 60 lbs. of tobacco seed, of each of the 2 varieties Havana and Virginia, were obtained from Messrs. Landreth and Company, Philadelphia, and distributed for experimental cultivation to 8 districts of Lower Burma

and to 7 districts in Upper Burma. Thôngwa district took 10 lbs. each of the 2 kinds of seed. From 11 districts reports on the results of the cultivation have been received. In Henzada, Upper Chindwin, Shwebo, Myingyan, Kyaukpyu, Myitkyina and Akyab the experiment was practically a complete failure owing chiefly to want of rain and partly in 2 cases to unsuitability of soil and in two others to attacks of insects. In Minbu it was successful. In Pakôkku, in one township, the seeds were washed away by unexpected floods, while in Yesagyo township the cultivation was generally successful though the leaves were damaged by untimely fall of rain and hail. In Tavoy 70 lbs. of leaf were produced at one centre, while at another insects destroyed the plants. In Thôngwa the Virginia tobacco was not a success, owing to damage done by ground crickets and by the unusual heat in the season. The Havana seed, on the other hand, was again most successful, and the cultivation is stated to have now gone beyond the experimental stage. Seeds obtained from the experiments of the previous year were stocked by cultivators for use. The acclimatized seed should do better than that newly imported. A large trade in Danubyu cheroots has recently sprung up, the cheroot being prepared from Havana or Virginia leaf thoroughly cured and well rolled. In Amherst fair success attended the experiment in one township only. About 200 lbs. of leaf were produced, the leaves being about a cubit in length and a span wide, of good aroma and flavour.

Ground-nut.—From Pondicherry 2 bags of ground-nut seed of 90 lbs. each were obtained for further experiment in Myingyan. These proved from want of rain a failure in all the villages but one. Supplies of ground-nut raised from the Pondicherry seed, furnished to the district the previous year, were sent to several other districts. From 8 of the 12 districts thus supplied have reports been received. In Thayetmyo and Shwebo the cultivation failed owing to drought. In Meiktila it was unsuccessful. In Minbu good crops were raised and it is said that cultivators there begin to understand and value the new cultivation. In Pakôkku, Lower Chindwin and Bhamo only partial successes are reported. In Katha from 80 lbs. of seed the yield was only 160 lbs.

Vegetable seeds.—Vegetable seeds obtained from Messrs. Sutton and Sons were distributed in Upper Burma only. Good success attended the experiments as a whole. In the Government gardens, cauliflower, cabbage and celery did very well in Myitkyina; rhubarb and dwarf beans were fair; Brussels sprouts were disappointing. In Katha fair general results were achieved. At the several district centres most of the vegetable seeds succeeded. In Mandalay, cabbage and turnip failed. Beet was unsuccessful in Bhamo, Myitkyina, Upper Chindwin, Magwe and Northern Shan States. Swede gave good results at all places except Upper Chindwin and Meiktila. Tomatoes failed in Bhamo and Myitkyina, and were elsewhere successful. Capsicum, melon and vegetable marrow were complete failures, and chilli, the egg plant and gourd nearly so. Brocoli did well at 4 centres only. Carrot, turnip, radish, peas, beans, lettuce and mangel were mostly successful.

Paspalum dilatatum.—Experiments with this grass seed, which was referred to in paragraph 26 of last year's report, were continued in the year, but partial or total failures are reported from all districts. In Magwe the seed was sown in *Ya* lands and though it germinated the young plants withered when about 4 inches high. In Myingyan the experiments in high ground were unsuccessful, and on low ground the plants came up and looked healthy, but soon died. The soil is reported to be unsuitable and damage was done by white ants. In Pakôkku the failure is ascribed to white ants. In Mandalay the seeds germinated in places but in the end failed. The grass is described as being unsuitable for the dry-zone tract where it was hoped it would principally establish itself. The trials in the Agri-Horticultural gardens in Rangoon were not attended with particularly promising results. The seeds were sown partly in beds and partly in boxes. Those sown in beds were either washed away by the heavy rains or removed by ants. Those in boxes under cover of a glass roof, germinated freely. The plants were transferred into pots, planted out in September, grew rapidly in the cold season, and soon formed tufts and seeded. But the seeds produced did not germinate when sown. The plants are said to have withstood the hot season when the native

grass was burnt brown. It is proposed to leave the crop standing in the hope of self-production. Cattle eat the grass with relish.

American cotton seed (*Gossypium sp.*).—A consignment of 39½ lbs. of this seed was obtained from Philadelphia and experimented with in three districts. It failed in Meiktila owing to want of rain. In Thayetmyo the plants grew vigorously at first but bore neither fruit nor flower. In Sagaing the seed germinated, but in one township the plants withered for want of rain, and in another township, though they did better, were not quite healthy. There is plenty of available land suitable for cotton-growing in the central districts, but so far the long-stapled varieties of the Egyptian and American cotton-seed have not succeeded. The short-staple indigenous kinds on the other hand thrive well.

Plantains (*Musa sapientium*).—The experiment with the 'nanthabu' plantain in Minbu, referred to in paragraph 29 of the previous report, has proved highly successful. The trees have fruited well and the friut is of good quality. Another supply of 250 shoots from the Madaya gardens of Mandalay have been forwarded to Minbu for further trial. Provided the shoots arrive in good condition and are planted in favourable soil, the trees undoubtedly will do well.

Potato.—At the instance of the Inspector-General of Agriculture in India, experiments were tried with three varieties, namely, Nansemond, New Jersey and Virginia, of American potato seeds, which were grown the year before at the Government Farm, Kirkee (Poona). A supply of 22 lbs. of tubers was obtained and sent for cultivation to the Southern Shan States, Chin Hills and Bhamo in equal quantities of each kind. No report has been received from the Shan States. In Bhamo the plants grew up healthy but were all destroyed by unusual high flood about the end of June. In the Chin Hills it is reported that the tubers were stored away on receipt in a dry place, but when taken out at the beginning of the rains they were found to be shrivelled, black and hard. They were, however, experimented with but failed to germinate. Of the supply of potato seed procured from Kumaon last year (see paragraph 30 of last year's report), one-half of the quantity sent to Pakôkku is reported to have been destroyed in the removal of the headquarters of the township from Mindat to Kanpetlet. The 25 lbs. fit to plant were given to Gurkhas who had settled down in the hill tracts. The seeds are reported to have germinated, but the plants were destroyed by insects owing to the tubers having been put down in virgin soil not prepared by burning. In the Chin Hills, 13½ maunds of potato seeds were distributed. An outturn of 5,000 lbs. is said to have been obtained. The experiments were a great success, and it is reported that all the military posts were well supplied with potatoes, that a large quantity was sold in the Kale valley and would probably find its way to the Chindwin stations. It is hoped that this success presages the beginning of a regular trade in potatoes between the Chin Hills and the plains. The potatoes issued to other villages in the Falam and Haka subdivisions were not so successful, the outturns being generally short. In Katha 50 viss (= 182·5 lbs.) of potato seed raised in the Taunggyi garden, Southern Shan States, was planted out, but the crop was poor.

Tea (*camellia theiferea*).—From Kurseong (Bengal) selected tea-seed was obtained and distributed in February 1903 for experimental cultivation, one maund in the Southern Shan States, and 5 lbs. each to Bhamo, Myitkyina, and the Ruby Mines. Provisional instructions for the cultivation of tea have been drawn up by the Assistant Director. There are, it is believed, immense areas of land suitable for tea cultivation in the northern districts and there appears to be no reason why Burma should not, in time, enter into close competition with other tea-producing countries in supplying local and even foreign demands.

Coffee (*Coffea*).—A supply of freshly plucked acclimatized berries of the Mocha or Arabian coffee was obtained through courtesy from gardens in the neighbourhood of Rangoon in which the plants flourish and yield annually a bountiful crop of excellent seed. These were pulped by hand and parchment-dried, one pound of the seed was sent for experiment to Bhamo, Myitkyina, the Southern Shan States and Toungoo, and ½ lb. to three private persons in Thatôn, Bassein and Myaungmya. In the Southern Shan States and Myitkyina the sowing was completely successful and the plants are doing well; in the former place the cultivation was undertaken at altitudes of from 4,000 to 5,000 feet, and in the latter

the seed was sown not far from a river bank. The failures in Bhamo and Toungoo are attributed to late sowings. Shade and careful manuring are indispensable not only for the growth of the coffee plants, but for withstanding the attacks of leaf disease. In Thatôn the seed does not appear to have germinated. It would appear that coffee thrives in high altitudes. Further experiments are now being made a, report on which will be given next year. These experiments will be on a larger scale, and conducted on the lines of full printed instructions on coffee cultivation, which have been prepared by the Assistant Director and issued to the districts concerned. From Coorg (Mysore) good Liberian coffee seed has been obtained and forwarded to 4 hilly tracts, namely, 30 lbs. and 20 lbs. respectively to the Southern Shan States and the Ruby Mines, and 5 lbs. each to Bhamo and and Myitkyina.

Para-rubber.—The seeds of the Para-rubber (*Hevea Braziliensis*) supplied to the Tenasserim Agri-Horticultural Society were experimented with in the Amherst and Thatôn districts. In a garden near Moulmein, 45 per cent. germinated and in a garden in Amherst 60 per cent. succeeded; the plants at both these places are said to be doing well. In Thatôn the seeds failed owing to neglect and late planting.

Sisal Hemp.—From only 2 of the centres to which plants were issued, as noted in paragraph 33 of last year's report, have reports come in. The Proprietor of the Zeyawadi Grant, Toungoo, reports that the supply was planted out on high ground of porous sandy soil, took root, have grown into hardy plants and are putting out bulbils. Experiments were also carried out in the Jail garden and in Maungmeshaung village, Yebyu township, Tavoy, and proved successful. Sample plants were forwarded from the latter place for inspection, which have been resown in a private garden at Insein (Hanthawaddy). They were excellent specimens. The Sisal Hemp (Agave Sisalana) is specially valuable for ship cables, as it has been found to resist the action of sea-water better than most other materials used for their manufacture. If the hemp is available in its crude state in sufficient quantities, merchants in Rangoon and elsewhere would no doubt be glad to open up a market. Large exports of it are made from India to America chiefly and also to Europe. The Sunn hemp (Crotolaria Juncia) is largely cultivated in Tavoy (also in Kyaukpyu and Sandoway) and used locally for making fish-nets. The soil, which is suitable for the latter description of hemp, would no doubt be equally good for Sisal hemp. Both the Sisal and Sunn hemp have been successfully raised in the Kyauktaga Grant, Toungoo.

China Grass (Rhea).—The experiment with China Grass is reported to have succeeded well in the Zeyawadi Grant, Toungoo. Three crops were taken in the course of a year and fibre extracted. The soil is said to be suitable. An application of cowdung manure is beneficial. The samples of the fibre forwarded to the Reporter on Economic Products to the Government of India, as referred to in paragraph 33 of last year's report, are declared to be not Rhea but 'Girardinia.' Its Burmese name is 'Petya.'

Manila hemp (Musa textilis).—A further supply of 12 plants were obtained from Port Blair and forwarded for experiment in the Government Garden at Katha. From the Phillipines also, where the plantain tree, of the variety named, grows abundantly, a large quantity of the seed is being procured for experiment in selected centres. In Kyauksè an effort is being made to introduce a simple machine for extracting plantain fibre built on the lines given by the Curator of the Government Botanic Gardens, Nilgiris (Madras). If this should succeed and the fibre be readily extracted, it may be the means of introducing a useful industry into the Province.

Wheat (triticum sativum) and Gram (cicer arientium).—Four baskets of wheat and 5 of gram were purchased locally for experiment at Tabayin (Shwebo district) under the direction of the Settlement Officer, Shwebo, but no report has been received. The seed distributed amongst the Northern Chins is reported to have turned out a failure.

Sessamum (Sesamum Indicum).—A further supply of 2 bags containing 200 lbs. of specially selected tilseed was obtained through the Inspector-General of

Agriculture from the Government Farm, Surat, and forwarded for extended experiment in Amherst. No reports have yet been received.

Paddy (*Oryza sativa*).—The 2 varieties of paddy, called *dhempu* and *barum aman* (in Burmese *yemanaing*), which were procured from Bengal last year and distributed to 4 selected districts for experiment on water-logged lands were cultivated during the rains. In Hanthawaddy the greater portion of the plants died owing to inundations, while the plants that withstood the floods were mostly destroyed by rats. Those which escaped destruction were reported as strong and healthy. In Tharrawaddy the experiments failed in every instance owing to floods. In Tantabin township of Toungoo district the experiment was successful, but in the remaining townships the plants withered for want of sufficient rain. The paddy is said not to be appreciated by the cultivators as the price fetched in the market is low, and the rice is inferior to the long-lived variety. In Kawa township of the Pegu district the paddy was planted in a flooded tract where the depth of water was 27 inches, but the grain did not develop properly and the experiment was unsuccessful.

Avacada Pear.—Through the courtesy of a gentleman in Ceylon, 4 plants and 23 seeds of the Avacada Pear were received for experiment. They were on receipt at once planted out, in the Agri-Horticultural Garden at Rangoon. A month after sowing, 17 seeds only germinated. The young plants were potted after the rains and in January were from 18 inches to 2 feet in height. The 4 plants which were put down at the same time as the seeds were also established but were not so vigorous as the seedlings raised. The plants were sent to Maymyo, the Southern Shan States, Bhamo and Myitkyina for trial. A few trees of "Le Conte" and "Keiffer" pears and of Arabian Date palms were obtained from the Government Botanical Gardens at Saharanpur and planted in Myingyan, but failed.

Water and Musk-Melons.—Six varieties of water-melon and 5 of musk-melon, ½ lb. of each, were obtained from the Himalaya seed stores, Mussoorie, and distributed for experiment to 6 selected districts. Three species of each of water-melon and musk-melon seeds, 1 lb. of the former and 2 lbs. of the latter, were also procured from Agra and Lucknow. These were sent similarly to 30 districts with instructions for sowing. Failure was almost general, due to various causes, such as want of rain, late sowings, destruction by insects, carelessness in conduct of experiment, and accident. In most cases the seeds germinated, but the plants died either before or soon after the fruit appeared. In Amherst the water-melon succeeded well, while the musk-melon failed; whereas in the adjoining district of Thatôn the musk-melon did well, while the water-melon fared badly. In Hanthawaddy the plants fruited, but the fruits are described as of inferior quality. In Akyab the musk-melon creepers did not flower, while the water-melon produced under-sized fruits. In Henzada the plants did well, but most of the fruits as they were ripening were attacked and destroyed by insects; some good melons were however obtained. In Thôngwa the musk-melon withered before fruiting, while a few healthy fruits of the water-melon were got, from which seeds have been stocked for next year.

Sugar-cane (*Saccharum officinarum*.—The species known as the 'Mauritius' cane grows luxuriantly and abundantly in the Zeyawadi Grant, Toungoo. At the request of the Director of Land Records and Agriculture of the United Provinces of Agra and Oudh a supply of 5,000 seed cane of this particular variety was procured from the Manager of the Grant. Owing, however, to defective packing the canes reached their destination in bad condition and only a very small portion germinated.

Beans.—A large export trade has recently developed in the Pègya bean, of both the white and red varieties, and the cultivation of the bean owing to the favourable prices offered is extending. Large shipments have been made to London and Glasgow by European firms of Rangoon. The bean is intended chiefly for cattle-food. It competes in the market with a similar bean from Mauritius. Lately reports prejudicial to the Burma bean were circulated asserting that it was poisonous. On the initiative therefore of one of the leading shippers in Rangoon, enquiries in the matter were instituted, and trade and other samples of both species of the

bean were collected from the chief shipping firms, bazaars and cultivating centres, and were forwarded to the Inspector-General of Agriculture for the purpose of analysis as to the presence of poisonous or other injurious principles. Further supplies were later sent, at his request, for botanical examination and identification. The Inspector-General of Jails, who was consulted in the matter, has said that the *Pègya* has been used in jails in lieu of arhar dall for years past without any ill effects. It is largely eaten by the Burmese, young and old, all over the province, in its boiled, parched or curried state. The white species fetches a considerably better price than the red, the difference being about Rs. 100 per hundred baskets of 69 lbs.

Arhar Dall.—One maund of seed obtained from Cawnpore was sent to Minbu for experimental cultivation. Arhar dall trees are extensively cultivated in the Zeyawadi Grant, Toungoo. The plants are allowed to remain in the ground for 2 years, but the second year's crop is not so heavy as the first, though the quality of the grain is much the same.

Jowar (*Sorghum vulgare*).—Fifteen baskets of the variety of millet known as Jowar, and in Burmese as *San-pyaung*, were sent on two different occasions from Sagaing to Minbu, for experimental cultivation. The experiments were a complete success, although the latter rains were scanty. There is said to be a great demand for the seed now in the dry-zone portions of the Minbu district.

Oats (*Avena Sativa*).—Nine and a half maunds of oat seed obtained from Cawnpore through the agency of the Director of Land Records and Agriculture of the United Provinces were sent to 9 districts of Upper Burma of which Deputy Commissioners were willing to undertake experiments. The cultivation will be carried on in the ensuing season.

Sericulture.—On the initiative of Sir Thomas Wardle, President of the British Silk Association of Great Britain and Ireland, who has so successfully established the silk industry in Kashmir within a period of five years, steps have been taken to procure 100 oz. of the best French silkworm-eggs for experiment in the Prome, Magwe, Pakôkku, Thyetmyo and Toungoo districts, where the industry on a languishing scale already exists. If the trials should prove a success, a larger quantity of eggs will be obtained and distributed. The mulberry tree for rearing the worms is easily raised along the beds of sweet-water streams. It remains to be seen whether the native rearer of the worm will be brought to take the extra trouble and patience involved in the rearing of the French species (Bombyx Mori), which is an annual, as against the Burmese variety (Bombyx Arracanensis), which is a monthly, worker.

Manures.—At the instance of the Inspector-General of Agriculture, the Agricultural Chemist to the Government of India desired to be furnished with samples of all nitrogen-yielding manures used in the province, for the purpose of analysis, in order to estimate the amount of nitrogen in each sample and determine the quantity of bulk manure necessary to be applied to land per acre. District Officers were addressed and samples of the required manures obtained from 9 districts and transmitted to Dehra Dun. The samples procured consisted of cow-dung, 'ya' ashes, farmyard manure, sewage, bats' guano, pig's dung, bone-dust, stable refuse and alluvial silt.

Miscellaneous.

24. *Agricultural banks.*—On a report furnished by the grantee of the Kyauktaga grant in the Pegu district in respect to the existence of an "Agricultural Bank" in the estate, enquiries were made. In the Kyauktaga grant and also in the Zeyawadi grant, Toungoo, there exists a system of loans by the grantees to the cultivators which carried with them interest at 15 to 18 per cent. per annum and that in the former grant a sum of Rs. 20,000 was so loaned out last year.

Monographs.

Monographs on glass-mosaic, wood-carving and silver-work were prepared by Mr. H. L. Tilly, Art Officer, illustrated by photographs by Mr. P. Klier, photographic Artist. Copies of these publications were distributed to the Principal native artists. Monographs on ivory-carving and silk-weaving were written by Messrs. H. S. Pratt and J. P. Hardiman, Assistant Commissioners.

Reports and Returns.

The Season and Crop Report and the Note on Rainfall Registration and on Inland Trade Registration have been issued separately. Considerable changes have been recently introduced in the preparation of general Agricultural statistics, and repetition of matters in the various reports has been avoided. The famine relief programme of works and the triennial analysis of districts with reference to security against famine, compiled with the latest census figures, have been prepared and printed. The work of the revision of the Burma Famine Code on the lines laid down in the Resolution of the Government of India on the Report of the Famine Committee has been taken in hand. The rice and cotton forecasts have been published as usual, relating respectively to the 14 principal rice-producing districts in Lower Burma and to the five chief cotton-growing districts of Upper Burma. In respect to the latter forecast, under orders from the Government of India, estimates are in future to include all districts in which cotton is grown.

During the year revised rules, applicable to the whole of Burma, in connection with the appointment of Subordinate Revenue and Land Records Officers, were issued.

The two separate survey class schemes for Lower and Upper Burma have been re-written and amalgamated, and are now in force under the title of the "Burma Revenue Survey Class Scheme."

Township Books continue to be maintained, and slightly modified rules for their upkeep are under issue. The object of the maintenance of the books has been more prominently brought to the notice of District Officers.

Reports on extra and special surveys employed during the year, on inspection by District Officers, which is a very important point, and on the botanical and other products and specimens called for by the Government of India, have contributed to the increase of the text of the Report over the prescribed maximum limit of 17 pages. The year under report has been exceptional.

Services of officers.

25. The Assistant Director, Mr. Clancey, maintained his high reputation as an able, thorough and hard-working officer. His work both in office and field has been invaluable.

All the Superintendents and probationers have, with the exception of one officer, who was in ill-health for four months and went on long leave in February, been well reported upon. The officers who specially distinguished themselves are Mr. C. P. Torrens, Hanthawaddy, Mr. J. Haddock, Mandalay, Mr. L. E. Palmer, Myingyan, Mr. D. Hardinge, Thôngwa, and Mr. George, Meiktila. Many other Superintendendents and probationers have been specially mentioned for hard and good work. Their names, as also the names of Inspectors and of surveyors specially brought to notice, have been noted.

MAYMYO:
The 3rd September 1903.

O. S. PARSONS,
Offg. Director of Land Records and Agriculture.

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APPEN

STATEMENT NO. I.—*Area under and Cost of Supplementary*

District.	TOTAL AREA.				Total assessment (including cess in Lower Burma) on the area in column 5.
	Total in	Under occupation in	Under cultivation in	Under assessment in	
1	2	3	4	5	6
	Sq. miles.	Acres.	Acres.	Acres.	Rs.
Akyab	1,921	609,278	538,290	594,498	12,27,187
Kyaukpyu	687	106,130	102,056	103,892	1,85,653
Sandoway	148	36,527	34,075	36,063	72,297
Hanthawaddy	2,630	1,148,454	1,084,466	1,140,869	37,17,770
Pegu	2,347	776,203	704,437	739,702	20,84,151
Tharrawaddy	1,159	443,034	421,252	435,798	10,72,523
Prome	1,724	338,807	317,111	336,957	5,24,738
Thôngwa	2,491	933,102	882,858	927,148	23,14,186
Bassein	2,223	600,303	515,943	595,170	14,19,134
Henzada	1,809	505,659	476,226	503,419	13,15,773
Myaungmya	2,139	565,692	481,742	500,779	12,04,454
Toungoo	1,497	275,693	254,526	261,070	6,21,850
Thatôn	2,270	596,398	577,510	580,749	12,05,707
Amherst	1,298	335,361	313,359	329,650	7,03,704
Tavoy	434	106,745	97,602	105,042	2,13,200
Mergui	577	80,997	72,695	79,893	1,59,058
Thayetmyo	577	92,658	76,606	91,981	1,31,327
Minbu	1,418	382,355	251,264	239,254	3,11,769
Magwe *	*2,915*	...	...	...	...
Mandalay	698	218,192	153,881	135,452	3,91,407
Katha	824	150,601	131,143	129,920	1,56,357
Shwebo *	*1,054*	*675,091*	...	...	...
Sagaing	1,851	691,864	476,445	†	†
Lower Chindwin *	*452*	*165,837*	*122,773*	*83,082*	*65,314*
Kyauksè	564	238,563	162,250	163,258	6,44,124
Meiktila	1,571	582,979	328,547	253,376	3,42,663
Yamèthin	1,776	376,558	254,905	20,498	34,216
Myingyan	3,001	1,096,026	599,947	455,483	3,73,977
Total for 1902-03 ...	37,634	11,288,179	9,309,136	8,759,921	2,04,27,225
Total for 1901-02 ...	30,720	8,858,716	7,830,852	8,119,646	1,90,21,200

* Under settlement.

DIX I.

Survey for the year 1902-03 (para. 7).

Number of Inspectors.	Number of Surveyors.	Total cost.					Remarks.
		Per square mile (column 2).			Per acre of the area in column 3.	Per cent. of the assessment in column 6.	
		Of superintendence and inspection.	Of survey staff.	Of combined total.			
7	8	9	10	11	12	13	14
		Rs.	Rs.	Rs.	Annas.	Rs.	
5	72	8·20	18·19	26·39	1·331	4·13	
3	35	13·77	9·21	22·98	2·380	8·50	
2	10	48·16	30·27	78·43	5·086	16·06	
8	101	8·64	22·15	30·79	1·128	2·18	
5	61	5·50	12·96	18·46	0·893	2·08	
4	45	8·43	20·63	29·06	1·216	3·14	
4	46	7·51	13·32	20·83	1·696	6·84	
9	87	8·55	18·31	26·86	1·147	2·89	
8	68	8·13	16·02	24·15	1·431	3·78	
6	58	6·97	15·98	22·95	1·313	3·15	
5	53	6·40	12·05	18·45	1·116	3·28	
4	38	8·58	11·89	20·47	1·779	4·93	
6	68	9·97	14·82	24·79	1·510	4·67	
5	38	9·60	12·90	22·50	1·393	4·15	
3	22	18·44	18·81	37·25	2·423	7·58	
3	16	15·95	11·99	27·94	3·185	10·14	
2	19	11·52	14·79	26·31	2·713	11·55	
5	45	8·37	11·77	20·14	1·195	9·16	
8	*74*	*14·63*	*14·70*	*29·33*	...	...	
5	47	20·87	26·74	47·66	2·437	8·49	
5	34	13·47	17·86	31·33	2·742	16·51	
6	*48*	*14·15*	*17·92*	*32·07*	*0·801*	...	
6	60	7·58	12·90	20·48	0·877	†	
1	*12*	*9·70*	*7·70*	*17·40*	*0·758*	*12·03*	
6	45	22·32	34·53	56·85	2·151	4·98	
5	50	10·44	11·57	22·01	0·949	10·09	
5	52	6·39	10·86	17·25	1·302	89·57	
8	70	7·83	8·93	16·76	0·735	13·46	
127	1,240	9·13	15·11	24·24	1·290	4·27	
105	1,058	9·29	15·44	24·73	1·368	3·98	

† Settlement rates not yet introduced.

STATEMENT NO. II.—*Supplementary Survey*

District.	Total number of *kwins* in tract.	NUMBER OF *KWINS* BY LAND RECORDS STAFF.				
		Superintendent.	*Inspectors.*			
			Number of Inspectors.	Number of *kwins* checked.	Average.	Total.
1	2	3	4	5	6	7
Akyab	1,103	49	5	645	129	694
Kyaukpyu	551	80	3	267	89	347
Sandoway	192	52	2	158	79	162
Hanthawaddy	2,795	72	8	888	111	940
Pegu	1,203	63	5	376	75	421
Tharrawaddy	544	40	4	454	98	494
Prome	1,013	86	4	636	159	654
Thôngwa	1,098	35	9	637	71	672
Bassein	1,268	76	8	622	78	647
Henzada	849	98	6	581	97	622
Myaungmya	1,085	62	5	390	78	425
Toungoo	762.	83	4	375	94	399
Thatôn	1,396	90	6	525	88	557
Amherst	864	77	5	411	82	407
Tavoy	424	88	2	187	93	230
Mergui	631	21	3	105	35	126
Thayetmyo	377	63	2	192	96	181
Minbu	837	86	5	922	184	963
Magwe *	1,113	92	6	759	126	759
Mandalay	641	88	5	452	90	354
Katha	1,269	110	5	598	120	708
Shwebo *	1,420	121	6	951	158	978
Sagaing	1,207	65	6	506	84	520
Lower Chindwin *	343	68	1	93	93	139
Kyauksè	612	97	6	499	83	596
Meiktila	1,910	102	5	766	153	867
Yamèthin	1,884	76	5	545	109	576
Myingyan	2,795	91	8	866	108	819
Total for 1902-03 ...	30,186	2,131	139	14,406	104	15,257
Total for 1901-02 ...	27,302	2,107	126	12,870	102	13,444

* Under

Inspections for the year 1902-03 (para. 15.)

IN WHICH THE FIELD-WORK WAS TESTED

By District Officers.								
Deputy Commissioner.	*Subdivisional Officers.*			*Township Officers.*			Total.	Remarks.
	Number of Subdivisional Officers.	Number of *kwins* checked.	Average.	Number of Township Officers.	Number of *kwins* checked.	Average.		
8	9	10	11	12	13	14	15	16
6	3	21	7	8	46	6	73	
...	...	..	...	8	3	...	3	
1	...	...	...	3	19	6	20	
12	3	60	20	7	67	10	139	
13	2	19	9	5	46	9	78	
4	2	12	6	5	45	9	57	
6	3	40	13	7	57	8	93	
8	3	26	9	7	35	5	61	
7	2	9	4	6	76	13	92	
2	2	38	19	6	94	16	134	
4	2	21	10	4	12	3	37	
3	2	8	4	6	28	5	39	
19	3	11	4	6	6	1	36	
7	3	29	10	7	50	7	86	
2	...	...	...	4	34	8	36	
6	2	4	2	4	21	5	31	
3	2	17	8	4	36	9	56	
29	2	20	10	5	77	15	54	
...	...	...	...	...	...	...	...	
...	2	6	3	4	45	11	51	
...	3	6	2	7	20	3	26	
...	...	...	...	...	...	...	...	
...	3	23	8	6	30	5	53	
...	...	...	...	...	...	...	...	
11	2	24	12	3	27	9	62	
...	2	19	9	5	43	8	62	
2	2	...	...	6	1	...	3	
...	2	4	2	6	55	9	59	
145	52	417	8	139	973	7	1,441	
151	55	543	10	145	1,223	8	1,834	

settlement.

STATEMENT No. III.—*Statistics relating to Government Survey*

Station in which school is established.	Average number of pupils on the rolls in each month.	Number of days the school was in session.	Average number of days each pupil received tuition.	Number of pupils on the rolls on the 31st March.			Total income.
				Pupils paying fees.	Free pupils.	Total.	
1	2	3	4	5	6	7	8
							Rs.
Akyab	33	271	271	41	...	41	471
Kyaukpyu	25	273	242	17	7	24	224
Insein	26	269	226	35	...	35	740
Pegu	28	267	232	27	...	27	678
Prome	37	266	223	18	19	37	416
Ma-ubin	17	271	231	15	...	15	416
Bassein	37	245	228	32	3	35	821
Henzada	20	274	236	17	1	18	428
Toungoo	23	241	216	22	4	26	468
Moulmein	21	243	227	18	...	18	578
Pakôkku	40	260	257	7	28	35	113
Minbu	44	256	229	34	10	44	890
Mandalay	24	271	245	11	7	18	215
Katha	26	263	215	20	6	26	223
Sagaing	28	251	248	26	4	30	419
Mônywa	29	249	215	6	19	25	79
Meiktila	24	264	224	8	19	27	149
Yamèthin	30	267	215	7	21	28	92
Total for 1902-03 ...	512	261	233	361	148	509	6,920
Total for 1901-02 ...	553	265	229	412	146	558	8,120

STATEMENT No. IV.—*Receipts and Expenditure of*

No.	Station.	Budget allotment.	Receipts from sale of products.	Ex	
				Establishment.	Purchase of seeds.
1	2	3	4	5	6
		Rs.	Rs. A. P.	Rs. A. P.	Rs. A. P.
1	Bhamo (Sinlumkaba)	2,394	48 4 3	1,292 9 0	67 7 0
2	Chin Hills (Falam)	1,305	391 10 0	540 0 0	200 0 0
3	Katha	2,075	101 4 0	1,112 4 1	127 1 0
4	Myitkyina	1,770*	96 6 0	.....	.....
5	Southern Shan States (Taunggyi) ...	4,256	1,511 5 1	1,891 4 1	4 10 0
6	Distribution of seeds &c., from headquarters.	4,500	.....	.....	1,445 6 11
7	Distribution of agricultural implements from headquarters.	2,000	.....	.....	.....
	Total ...	18,300	2,148 13 4	4,836 1 2	1,844 8 11

* Includes allotments for Sima and

Schools for the year 1902-03 (para. 17.)

Expenditure					Number of pupils who passed the last examination in			Remarks.
On establishment.	On scholarships.	On prizes.	On other contingencies.	Total.	Surveying.	Arithmetic.	Revenue law.	
9	10	11	12	13	14	15	16	17
Rs.	Rs.	Rs.	Rs.	Rs.				
1,104	477	36	553	2,170	18	6	4	
1,104	745	16	118	1,983	8	5	...	
1,132	600	36	624	2,392	25	8	25	
1,404	761	28	24	2,217	18	7	6	
1,206	1,017	14	487	2,724	23	5	19	
1,104	866	14	159	2,143	11	3	4	
1,128	990	34	643	2,795	24	12	26	
1,104	514	18	32	1,668	14	5	12	
1,140	437	22	182	1,781	19	7	5	
1,091	1,439	22	255	2,807	15	11	14	
1,104	750	166	98	2,118	22	7	15	
1,104	1,019	36	457	2,616	20	5	13	
1,104	879	26	152	2,161	7	3	1	
888	642	28	132	1,690	15	...	3	
1,104	865	28	217	2,214	19	2	7	
1,048	620	30	250	1,948	12	1	18	
828	623	26	212	1,689	16	2	2	
1,104	459	30	147	1,740	15	3	2	
19,801	13,703	610	4,742	38,856	301	92	176	
22,393	14,570	480	5,383	42,826	319	117	119	

Experimental Cultivation during 1902-03 (paragraph 22).

PENDITURE.					
Up-keep of garden.	Feed and keep of stock.	Miscellaneous contingencies.	Purchase of agricultural implements.	Total.	Remarks.
7	8	9	10	11	12
Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
112 13 11	2 0 0	169 8 0	.....	1,644 5 11	
200 0 0	.....	266 5 6	.....	1,206 5 6	
503 3 3	.....	255 5 0	.....	1,997 13 4	
.....	.....	.....	.....	1,455 15 0	Details for columns 5, 6, 7, 8 and 9 not furnished.
582 12 11	65 0 0	343 0 8	.....	2,886 11 8	
.....	.....	43 2 0	.....	1,488 8 11	
.....	.....	.....	84 4 6	84 4 6	
1,398 14 1	67 0 0	1,077 5 2	84 4 6	10,764 0 10	

Sadôn gardens at Rs. 350 each = Rs. 700.

APPENDIX II.

No. I.—REPORT ON EXPERIMENTAL GARDENING IN THE MYITKYINA DISTRICT FOR THE YEAR 1902-03.

Myitkyina Garden.—The amount spent on the garden during the financial year was Rs. 1,107-5-6 as against Rs. 904-8-7 spent during the previous year.

The amount realized by the sale of fruit and vegetables was Rs. 96-6-0. The demand for English vegetables in Myitkyina is small. The Military Police grow their own vegetables.

Fruit trees.—The peaches obtained from Saharanpur in January 1901 have borne a good crop. "Hakim" and "Beaulots slipstone," which failed to ripen last year, have done particularly well this year. On the other hand, the country sorts, though bearing as many fruit as they could be allowed to carry, have not produced as fine-flavoured or large peaches as they did last year. The season has been a particularly early one, and has therefore, perhaps, suited the former better than the latter.

The peach plants received from Taunggyi in January 1902 are growing into nice little trees, but have not done as well as the Saharanpur plants. There are now 28 full-grown trees in the garden, of which 8 bore fruit this year.

The nectarine plants obtained from Taunggyi in 1902 are growing well, but have not yet borne fruit. The plums and apricots obtained from Saharanpur in 1901 are growing well. A quantity of fruit formed on both, but did not ripen. Those obtained from Taunggyi last year are very backward. The apples pears and cherries received from Taunggyi last year are growing well. None were tried from Saharanpur. Three "Ava-cada" pear seedlings were received in good condition from the Agri-Horticultural Society, Rangoon, and are doing fairly well.

Two walnut plants of the Himalayan variety raised from seed in 1901 are making slow progress. One plant raised from a Chinese walnut in 1902 is doing better. The latter, as every one knows, is fit to eat. The former is as hard as a stone and with little kernel. The walnut indigenous to the Kachin Hills is quite as good. Three small Spanish chestnuts obtained from Saharanpur are still growing though very slowly. One young *lichi* tree is doing well, two others are struggling. Six Loquot trees are thriving and they are at present in blossom. The dorian raised last year is dead. Another has been put down and is coming up slowly. The oranges, limes, lemons and pomeloes obtained from Saharanpur in 1901 are growing well. A few sprays of blossoms were produced, but no fruit have as yet been obtained.

Strawberries from Sadôn (4,700 feet), as well as some grown from last year's plants in this garden, were put out in September and there was but slight difference in the result. The former produced fruit earlier and the fruit, if anything, was larger; but both were equally prolific, and the fruit equally well flavoured. Strawberries were obtained in small quantities in December, and in February and March there was a fairly heavy crop, while in April and May a dish was obtained occasionally. One mahogany plant is growing well.

Three dozen nectarine, plum and apricot plants were ordered from Taunggyi at the end of December last. They were despatched early in January, but owing, I believe, to some mistake on the part of the Postmaster at Thazi the box containing them did not reach Myitkyina until the end of February, and then in a broken condition. Only a few of these plants survived. This was a most unfortunate mishap, as it leaves much ground in the garden vacant.

A third gardener has been sanctioned for the Myitkyina garden from the 1st of April 1903, and it is proposed to extend the present garden by taking up land to the north of the Deputy Commissioner's house. The ground has already been cleared and a boarded well sunk at a cost of Rs. 175, but it is not proposed to begin planting until all the spare ground in the present garden is taken up.

Vegetables.—Vegetables were grown from Sutton's seeds. Cabbages were very successful, but finer specimens were obtained in a private garden from seed purchased in India. The Savoy cabage did particularly well and came in useful when the other kinds were over. The cauliflower was very good. Brocoli grew luxuriantly, but formed no flowers. Brussels sprouts were disappointing, some half a dozen dishes only being obtained from about 50 plants. Lettuce seeds sown in boxes failed to germinate, but seeds from the same packets were successful at Sima. A good crop of peas was obtained from December to March. Seed saved from last year produced plants which grew rapidly and bore well, but the peas were harder and smaller than those obtained from Sutton's seed.

The first sowing of dwarf beans (Canadian Wonder) did fairly well, but the second was much damaged by red and white ants. The seedlings had to be transplanted when about nine inches high. I may mention that seed soaked previous to sowing did not do as well as seed sown dry. Some fifty plants of broad-beans were obtained from seed soaked for twelve hours and then sown in boxes and afterwards planted out. A small crop of beans was obtained. They were tender and well flavoured, though small.

Nearly every seed of celery that was sown germinated and a large crop was obtained from February to May. The plants will apparently not survive through the dry weather

at Myitkyina, although they do so at Sima, where this vegetable can be obtained throughout the year. Spinach did not germinate, nor did parsnips. Turnips, swedes and mangel-wurzel were very successful. Only a small crop of carrots was obtained.

The first sowing of beet-root was beaten down by rain and failed; the second was more successful, but the crop was not good.

Some 40 plants of "Globe" artichokes were raised and produced half a dozen artichokes fit for the table. The same plants will probably bear well next year if the ground is liberally manured.

Sima garden.—The sum expended on the garden during the year was Rs. 348-9-6, as against Rs. 275-8-9 in the preceeding year.

Fruit trees.—The roots of all the peach trees were exposed about the middle of December and the branches were pruned. The roots were manured and closed up again about the end of December. There was a good crop of blossoms and a fair crop of fruit. The fruit began to ripen about the middle of May. If the roots had been exposed earlier, say, in November, it is thought that the trees might have yielded better results. There is difficulty in procuring a sufficient supply of manures at Sima. The Kachins and Indian cowherds do not take the trouble to collect it.

Both at Sima and in Myitkyina the peach seems to be the tree that thrives the best of all.

The other fruit trees in the garden, namely, cherries, plums, apricots and nectarines, are still too small to bear fruit.

Strawberries have done very well; they were ripe by the middle of March, the fruit was rather small, but the flavour was good.

Lieutenant Magniac, who was in charge of the garden during the year, thinks that gooseberries, raspberries and other early English fruit trees will do excellently in Sima.

Vegetables.—With the exception of spinach and parsnips, all English vegetables did well. Cauliflower gave very good results, as did also tomatoes. The latter bear well, if grown under shelter. The vegetable seeds were put down in bokes about the middle of August and replanted in open beds a month later. The spinach and parsnip seeds may have been bad. A bed of rhubarb which was put down appears to be doing well.

There are now two permanent gardeners employed at Sima. They have been working since the 15th of April. Formerly a couple of Gurkha sepoys did the work, but they knew little of gardening. It is extremely difficult to get good gardeners in this district, and both in Myitkyina and at Sima the men are little better than coolies.

MYITKYINA:
The 24th June 1903.

W. A. HERTZ,
Deputy Commissioner, Myitkyina.

No. 2.—REPORT ON EXPERIMENTAL ORCHARD AT SINLUMKABA, BHAMO, KACHIN HILLS, FOR THE YEAR 1902-03.

1. *Grant.*—The grant for the year was Rs. 2,394 and proved ample for the up-keep of the garden. The object with which the experiment was started has been obtained, and I would therefore suggest a further reduction of Rs. 500.

2. *Expenditure.*—The expenditure during the year was Rs. 1,644-5-11 leaving a credit balance of Rs 749-10-1

3. *Receipts.* The orchard has now been in existence for four years and shows a slight increase yearly under this head. The receipts during the year under report were Rs. 48-4-3 as against Rs. 35-5-9 in the year previous. This amount was realised by the sale of vegetables to the Military Police and the few visitors who came up for a few weeks in the hot weather.—The supply of vegetables was greater than the demand.

Work during the year.—The wet months were employed in weeding the garden. The experiment of sowing English grass seed between the trees has proved beneficial. The winter rains were again very poor and the hot season a particularly dry one. Springs, which furnished water for portions of the garden during the previous season dried up. Fortunately the bund which forms one side of a tank held during the rains and the reservoir furnishes ample water for garden and domestic uses. No indigenous trees were purchased during the year as it was considered inadvisable to increase the area of the orchard owing to the difficulty of providing water. The stocks which were purchased last season and which failed to hold the grafts were again budded on to during February 1903. The percentage of successful grafts was low owing to the displacement of scions by high winds which prevail throughout the year.

Orchard.—During the year an increase of 35 trees was made to the stock the result of successful grafts. Several pears and apple trees came into bloom early in March and set a few fruit but owing to a violent tempest which swept over the garden on the 15th April 1903 the fruits were blown down; a very few escaped. The peaches and plums are again to the fore in selling fruit, but as already reported they fail to mature owing to the early rains. They attain a very fair size but split and rot away as soon as they are touched by rain. The grafting of English cherries on the indigenous stock has been very successful, and one lived

in hopes that the habits of the present stock would have been transmitted to the scion, but so far there has been no change, the result aimed at being to hasten the formation of fruit in order to get them to maturity before the rains.

The indigenous varieties, of which there are two, came into blossom early in December and in February, which gives ample time for the fruit to ripen. On the other hand the imported kinds do not start into bloom until the middle of April, and have consequently insufficient time to ripen before the rains set in. To sum up, the climate is against the profitable growth of thin skinned and perishable fruit such as peaches, plums, apricots and nectarines, but is suitable for the harder kinds, such as pears, apples and nuts of all kinds. Unfortunately, these species are much slower of growth than the former, and it will be necessary to keep up the experiment for at least four or five years longer if anything like satisfactory results are to be obtained. The experiment of removing some of the thin skinned fruit trees to Lweje last year was not attended with success. Of the 36 plants removed there now only remain six. The remainder were destroyed by white ants.

Vegetable garden.—This branch of the garden yielded good results. The Kachins display more interest in this branch of gardening and a few of the more industriously inclined now grow them for home consumption.

In February 1903 a box of English seed potatoes was planted out and promised well, but two nights of sudden frost as late as the 17th and 18th of March nipped the vines and the prospect of a decent crop can therefore hardly be expected.

Flowers.—Annuals of all kinds were flowering; bulbs made a very brave show. I grew some excellent Faushios from seed. The seeds were put in the open ground in August and the plants flowered early in March. I mention this fact here as I have seen it stated by expert gardeners that seeding Faushios do not bloom until the second season.

SINLUMKABA:
The 7th May 1903.

D. W. RAE,
Civil Officer.

No. III.—REPORT ON EXPERIMENTAL CULTIVATION IN THE CHIN HILLS FOR THE YEAR 1902-03.

This is the fourth annual report submitted, and deals with the year ending 31st March 1903.

Expenditure.—The total expenditure under all heads has been Rs. 1,206-5-6 as against Rs. 1,204-11-6 last year.

Receipts.—The supply of vegetables at Falam, has been good almost throughout the year. The vegetables have been supplied to all inhabitants of the post on payment of a monthly subscription of Rs. 2.

The receipts under all heads reached the total of Rs. 391-10-0 as against a total of Rs. 251-8-6 last year, showing an increase of Rs. 140-1-6. This increase is due partly to the fact that last year (1901-02) no subscriptions were collected for certain months, as during those months the garden produced no vegetables.

Fruit orchard (Falam).—No. satisfactory results have as yet been obtained, almost all the fruit having been destroyed by maggots. At the present moment most of the trees bear a quantity of fruit, and measures are being taken to try and keep them free from insects; it remains to be seen whether the measures prove successful or not.

The following trees from Taunggyi were purchased at a cost of Rs. 67-4-9 and planted in the orchard:—

	Trees.
Apples	5
Pears	5
Peach	6
Nectarines	5
Apricots	5
Plums	5
Cherry	

These trees are doing well; three of the nectarine trees are bearing fruit.

The old trees are doing much better this year, only four having died against 26 in the previous year.

None of the fruit seeds planted last year germinated.

All the deodars received died. One hundred and fifty trees, walnuts, horse—chestnuts and eating-chestnuts were transplanted along the station roads, of these almost half died owing to grubs attacking the roots. In their places 100 small walnut trees have been planted; these are doing well.

The fruit trees at Tiddim and Haka appear to be doing well.

At the time of writing the trees in all three stations, Falam, Tiddim and Haka, have a good crop of young fruit on them, but it is more than doubtful if the fruit will ripen. Next cold season I propose exposing the roots and so force on the trees. Tiddim suffers from the want of a good water-supply, and until the post is furnished with a good supply (a scheme has been submitted to Government), no great results can be obtained either from the fruit trees or the vegetable garden.

Trees of various kinds, oak, banyan, sweet-lime and pine, were planted about Tiddim. All with the exception of the oak are flourishing. During the coming rains seeds of the following trees, eucalyptus, Brazilian rubber, gold mohur (*Poinciana Regia*) and the *santalum* album will be sown and the results carefully watched.

Potatoes.—At the end of last year eight maunds of potato seeds were distributed (with the exception of a small quantity which was planted in the Falam garden) among Chin villages. Four hundred and sixty pounds were distributed among the Northern Chins and were a great success. It has been estimated that the outturn must have been at least 5,000 pounds. All the posts were well supplied with potatoes, and a large number of bags (the Chin bag contains about 40 pounds) were sold in the Kale valley, and will probably find their way to the Chindwin stations. I hope this is the beginning of a regular trade in potatoes between the Chin Hills and the plains. Two bags of potatoes were cultivated by the Falam villagers. The outturn was eight bags.

The potatoes issued to other villages in Falam subdivision as also those planted in the Government garden at Falam have not been successful, the outturn being very small. Those distributed in the Haka subdivision proved successful and a considerable outturn was obtained, the best crop being obtained from the Yokwa village. It was noted that the potatoes obtained in the months of March, April and May were not so good as those obtained during the other months.

Strawberries.—As usual, these are doing very well. From the 1st April 1902 to 31st March 1903, 147½ pounds have been obtained and sold at four annas per pound. From three to four pounds are now being distributed daily. During the year the number of beds was increased. The plants in the new beds are doing very well, and there is every prospect of a large crop of fruit being obtained soon.

Onions.—The receipts from this source were smaller than last year, as owing to a mistake a large quantity of leek seeds were sown instead of onions. As there was no sale for the leeks they were distributed with the vegetables. Six hundred and twenty-two pounds of onions were sold realizing Rs. 116-8-0 against Rs. 92-1-0 obtained last year. The increase is due to the price having been raised from annas 2 to annas 3 per pound.

Vegetable garden (Falam).—During the dry season the garden at Falam produced a good supply of vegetables, and the various households received a daily supply. French beans, carrots, cauliflowers, lettuce, radishes, beetroots, cabbages, spinach, etc., all did very well. It was found that cauliflower required transplanting four or five times, otherwise poor results were obtained.

Small vegetable gardens are maintained at Tiddim and Haka, and the results have proved satisfactory. Mr. Bateman reports that he was unable to obtain broad beans at Tiddim until he nipped off about two inches of the plant from the top when the plant was about 2 feet high and about to flower. Once he did this he obtained excellent results. The garden at Falam was plentifully manured during the open season.

Establishment.—The establishment is the same as last year, namely, one gardener and one servant. The remarks made in last year's report regarding the gardener still apply. So long as the services of a really good gardener cannot be obtained no great results can be expected, although climate and other conditions are all in favour of good results.

Wheat.—The seed distributed amongst the Northern Chins were sown by them in the month of August and turned out a total failure. A small quantity sown in the Government garden, Falam, in the same month did well. Experiments in oats and wheat show that on a small scale with a good water-supply at hand the experiments are, as a rule, successful, but on a large scale they have so far met with no success.

General.—The rains and general condition were normal during the year. A new shed was built in the Falam garden at a cost of Rs. 50. The Public Works Department furnished an allotment for the planting of trees along the station road. Cuttings have been obtained of various varieties and planted throughout the station in carefully prepared holes fenced in with wire. So far the efforts to induce the Chins the cultivate potatoes have proved successful, and in time I hope an extensive trade with the plains will be developed. Considering how handicapped we are by the want of a good gardener, the results cannot be deemed unsatisfactory. Mr. Street, Assistant Superintendent, Falam, has again greatly interested himself in the garden, and to his exertions are due the good results obtained.

FALAM:
The 18th April 1903.

E. O. FOWLER,
Superintendent, Chin Hills.

No. IV.—REPORT ON EXPERIMENTAL CULTIVATION IN THE SOUTHERN SHAN STATES FOR THE YEAR 1902-03.

Government Orchard.

Grant.—The budget allotment for the year was Rs. 2,310 as compared with Rs. 2,419 in the previous year and was exceeded owing to the expenditure on gardeners' quarters and other buildings connected with the orchard.

Expenditure.—The total expenditure under all heads was Rs. 2,886-11-8 as compared with Rs. 2,762-13-0 and Rs. 3,315-10-6 in the two preceding years.

Receipts.—The receipts for the year fell below the average on account of the practical absence of receipts from potato cultivation, hitherto an important source of revenue, however, it is satisfactory to note that the receipts from the sale of vegetables and fruit trees were the highest on record since the establishment of the garden.

Work for the year.—There is nothing of special interest to report regarding the work for the year. The work was merely routine on the lines hitherto followed, the nurseries were well stocked against future requirements and 1,760 viss of potato seed put down.

Experiments with coffee (Arabian) and tea seed received from the Director of Land Records and Agriculture were made. The coffee seed was put down in a selected plot in November 1902, and germinated fairly well, the seedlings being now about 4 inches high; sowings made at the same time in a garden about 1,000 feet lower than the orchard have been similarly successful. From the appearance of the tea seed on receipt little hope of success was entertained. The seed sown in the orchard in March 1903 failed to germinate and mostly rotted in the ground. Experiments with three varieties of American sweet potatoes were also started and the results promise well.

Establishment.—As in the previous year the establishment consisted of one head gardener, three under gardeners and four coolies.

Three probationers' were granted certificates of fitness and are now employed by the Chiefs of Lai Lèng, Yengan and Maw.

General remarks.—During the year both the cherry and pear trees flowered, but no fruit set. The strawberry crop was heavy and sold well. Apples, peaches, plums, damsons, and cherimoyer fruited well. Many young trees of the latter were sold locally to various chiefs. The number of fruit trees sold to various local purchasers and despatched to all parts of Burma during the year was 1,808. This report has been written by Mr. D. M. Gordon, in whose charge the orchard now is.

TAUNGGYI:
The 5th June 1903.

J. G. SCOTT,
Superintendent and Political Officer,
Southern Shan States.

NO. V. REPORT ON THE EXPERIMENTAL GARDEN, KATHA, FOR THE YEAR 1902-03.

1. This is the second annual report submitted.

2. *Grant, Expenditure and receipts.*—The grant for the year was Rs. 2,075 nearly all of which was expended.

The receipts amounted to Rs. 101-4-0 and were realized by the sale of English vegetables, strawberries and ground-nut.

3. *Work for the year.*—An additional area of nearly 8½ acres was fenced in and partly cleared and stumped. About 2 acres of this consisting of abandoned *mayin* paddy fields, was utilized as a vegetable garden and part of the remainder planted out with a further supply of fruit and other trees received from Saharanpur during the year.

The area of the garden is now nearly 12 acres. Vegetables were planted with a view to preparing the land for fruit trees. The new part of the garden is not so exposed to the sun and does not bake so much in the hot weather. Much of it is irrigable, and now that it has been thoroughly drained and cleared it should show good results next year.

4. *Water-supply.*—The dam constructed last year was entirely washed away in one night, owing to an unprecedented heavy fall of rain 7½ inches within 6 hours.

A smaller temporary bund has been constructed in the same spot which meets all requirements during the dry season, and can be kept in repair annually at small cost.

This year was a record dry one, there having been practically no rain between October 1st and May 15th, and as the water never showed signs of giving out, there need be no fear in the future regarding the water-supply.

5. *Orchard.*—The exceptional hot weather killed an unusually large percentage of this year's new trees.

Last year's peach trees formed plenty of fruit, but as in the case of all the old established peach trees in Katha this year, the abnormal dryness of the season prevented the fruit from filling out. Next year there should be a good crop.

Lichis do very well in Katha, but are exceedingly hard to rear; the culture should be persevered in.

West India Papaya.—Seed was obtained from Kyaukpazat Gold Mine and some magnificent papayas were raised.

6. *Vegetable Garden.*—Vegetables did fairly well, Spanish onions and leeks did specially well; and these onions might make a paying crop in this locality. Other vegetables succeeded up to the ordinary limitations of the plains. A supply of the following English vegetable seed was obtained from Messrs Sutton and Son, England, direct; artichoke, green globe, beans, beet, brussels sprouts, cabbage, celery, cauliflower, carrot, leek, lettuce, onion, parsnip, tomato and turnip.

The seeds so got were very much better than those in the usual Sutton tins, which would seem to be often not quite fresh.

A supply of 80 pounds of ground-nut received from the Deputy Commissioner, Myingyan, was tried, but owing to the poor quality of the soil and the excessive closeness of the plants, the yield only amounted to about 160 pounds. A further experiment is now being tried on what appears to be better soil and may yield better results.

Fifty viss of potatoes, lately received from the Taunggyi garden, have also been planted, but the crop does not look promising.

Strawberries.—About ten beds of runners were planted out in the beginning of August. The plants did well and had they all been of good kinds the yield would have been tremendous. As it was only some 10 per cent. of the plants were of good kinds and they fruited consistently from January to the middle of May. During March the fruits were as big as English strawberries. Plants have been carefully selected this year. Transport is the difficulty. If packed in cotton wool they travel fairly and next year might be sent to Mandalay.

7. *Establishment.*—The sanctioned scale remains the same. A Shan gardener was obtained from the Taunggyi orchard during the year in place of the former gardener who resigned. The new man, Oktama, is worth his pay: he has a good idea of gardening and is a good, steady worker and keeps his four coolies employed.

8. *Insects.*—Were not so bad as in the previous year, but some really effective wash is wanted. Trees cannot thrive when they are from time to time deprived of their leaves.

9. *Manure.*—Well decomposed horse or cowdung, with a little lime continues to be used and no experiments have been tried with any other kinds. A lot has now been put in and the soil is assuming a garden character instead of its former poorness.

10. *General.*—The garden was inspected by His Honour the Lieutenant-Governor and the Financial Commissioner during the year.

There is little doubt that peaches will do well in most years or that strawberries will do excellently. The secret with strawberries is to plant the runners out in August, and not in the beginning of the cold weather.

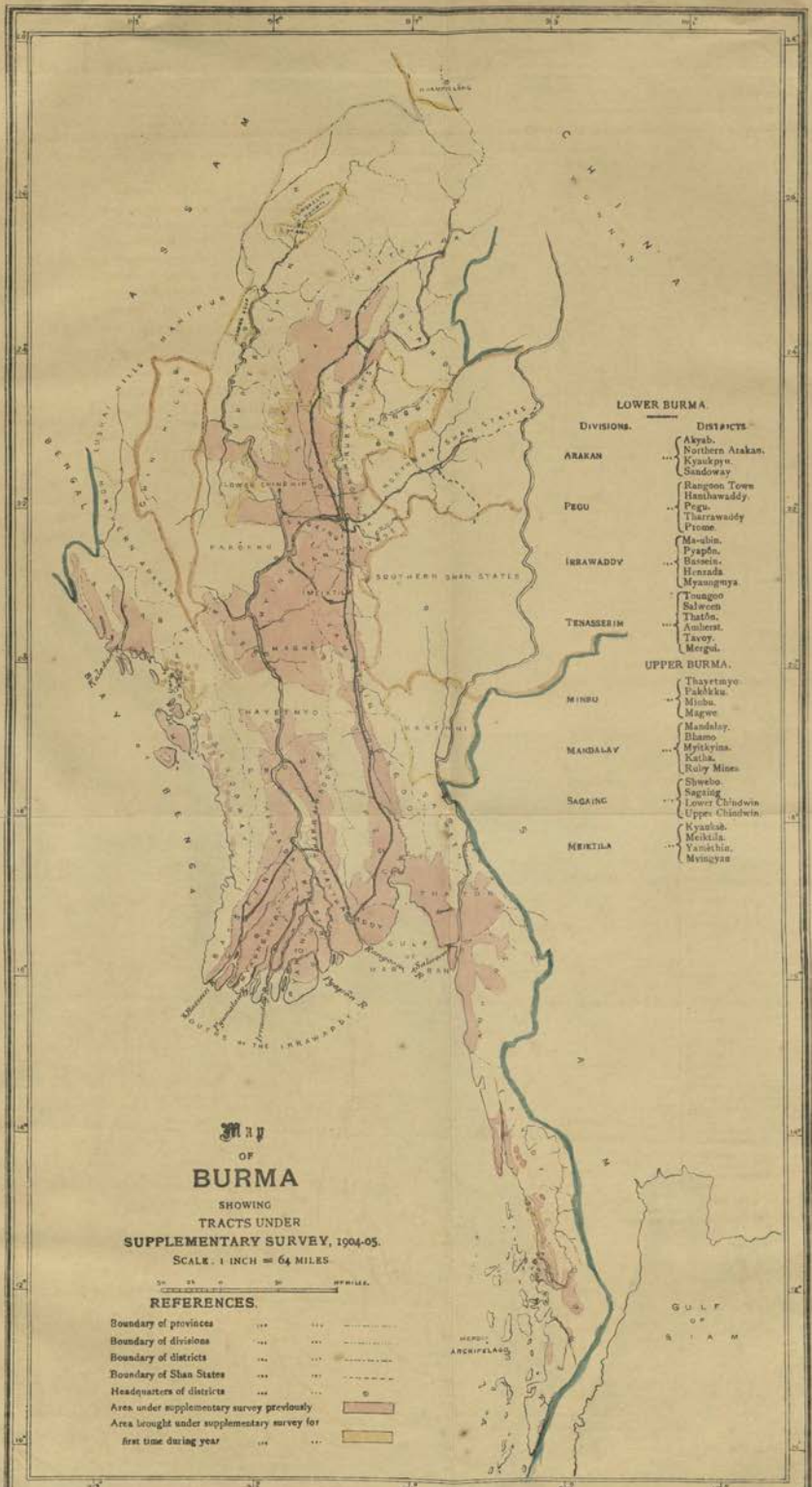
I fear Katha is not suitable for apricots, pears and several other kinds of fruit trees which require a colder climate.

Whether the growing of stone fruit and strawberries, which are most difficult to transport to a market in good condition, will ever take on in the district, I rather doubt.

Owing to the protection of teak and the constant yearly increment in teak trees, the area available for *taungya,* is yearly becoming constricted (very much so and very fast in the West of the district), and apparently the people will be forced to take to fixed garden cultivation instead of shifting *taungya,* and they will then realize the use of an experimental garden where paying crops, such as ground-nuts, can be tried in various ways under their eyes.

A. E. ENGLISH, I. C. S.,
Deputy Commissioner, Katha.

G. B. C. P. O.—No. 223, D., L. R. & Agri., 1-10-1903—280.



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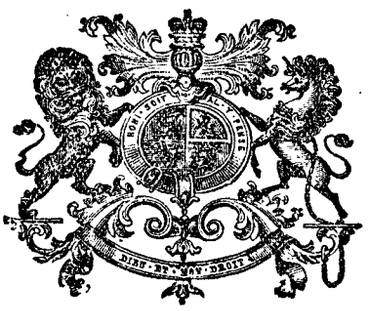
LAND RECORDS ADMINISTRATION REPORT

FOR

THE YEAR ENDING 30TH JUNE 1904.



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LAND RECORDS ADMINISTRATION REPORT

FOR THE YEAR ENDING 30TH JUNE 1904.

Prefatory.

ON his return from leave Mr. A. Gaitskell, I.C.S., resumed charge of the Department from Mr. O. S. Parsons, I.C.S., on the 26th December 1903; and on the former's reversion to the regular line on the 20th May 1904 Mr. J. MacKenna, M.A., I.C.S., was appointed to the post of Director. The Assistant Director, Mr. J. C. Clancey, F.R.A.S., was on three months' leave from the 30th November 1903; and during his absence Mr. C. P. Torrens, F.R.G.S., Superintendent of Land Records, officiated for him.

During the year long leave was granted to three officers, and short leave to four members of the Department. Owing to the exigencies of the service a considerable number of transfers had to be made from district to district, and in consequence of the paucity of officers every probationer was placed in independent charge of a district for a longer or shorter time.

There were three grade promotions during the period of report; and the following probationers were appointed to the Department, namely, Messrs. A. P. P. L'Estrange, B.A., W. S. O'Hara, and E. T. W. Skinner.

A new district (Pyapôn) was formed during the year, and a Superintendent of Land Records has been placed in charge. Mr. Powell relinquished charge of his duties as Registrar and *Akunwun* of Rangoon Town Lands on the return to duty of the permanent incumbent (Mr. Shircore).

The services of one Superintendent were dispensed with during the year, and a probationer who had been transferred to the Excise reverted to his substantive appointment.

On the formation of the Katha special Survey Party in November 1903, Mr. Purchase, Superintendent of Land Records, was placed in charge and continues there.

SECTION I.

LAND RECORDS.

Demarcation preliminary to survey.

Demarcation work was continued in the Pakôkku district, and an area of 931 square miles completed at a cost of Rs. 4,097. Work was confined to the Seikpyu and Pauk townships, the former of which is now finished and the latter still in hand. It has been decided to exclude from the demarcation programme the three western townships of Pasôk, Tilin, and Gangaw in the Pakôkku district owing to the scattered nature of the cultivation, much of which is poor, the large areas of contained waste land, the unhealthiness of the tract and its great distance from headquarters.

In Tavoy an area of 21 square miles was demarcated at a cost of Rs. 408 by a small staff for a local survey party which operated there during the year. In Mandalay 51 square miles were demarcated according to thugyiship boundaries in connection with revision survey operations which were being carried on by a special staff. There was no extra cost incurred for this as the work was undertaken by local hands.

For the work of the special local Survey Party operating in the Katha district advance demarcation was done by Township Officers and Land Records Inspectors assisted by Inspectors belonging to the Settlement Party which was at work in the district at the time. The total area completed was 118 square miles at a cost of Rs. 1,492.

The demarcation was good except in Tavoy, where parts of it had been indifferently done.

About 9 square miles comprising the extended limits of the Rangoon Municipality are in process of demarcation for a large-scale survey of the area by No. 7 Party of the Survey of India Department. This work has been only quite recently started and two demarcating officers are engaged upon it.

Survey by No. 7 Party, Survey of India Department.

2. Number 7 Party of the Survey of India Department completed 560 square miles of traverses in the Myaing and Seikpyu townships of the Pakôkku district and 221 square miles in the Ye-u subdivision of the Shwebo district. It also finished the cadastral survey of 301 square miles in the Pakôkku and Myaing townships of Pakôkku and 507 square miles of scattered villages in Shwebo. The cost during the field-season for traversing was Rs. 46,081 and for the detail survey Rs. 66,397, while the estimated cost of the entire work of the recess-season is Rs. 94,000. The total cost, actual and estimated, of the combined operations thus amounts to Rs. 2,06,478.

Revision survey.

3. According to the settlement programme the Danubyu and Yandoon townships of the Ma-ubin district are to be re-settled in 1904-05. Considerable areas within this tract were found to require re-survey owing to numerous changes in field boundaries since the original survey and to large extensions of cultivation. Steps were accordingly taken to organize a special party for the work so that correct printed maps may be forthcoming for the revision settlement. The establishment employed consisted of three Inspectors, two sub-surveyors and 20 field-surveyors, and worked under the orders of the Superintendent of Land Records. The total area cadastrally surveyed amounted to 366 square miles, of which 112,782 acres were under cultivation. The average size of the field in the occupied area was 0·43 acre. The area traversed, including sub-traverses, consisted of 13 square miles, while a large number of theodolite stations were newly laid and missing ones replaced. The cost of the operations amounts to Rs. 16,884 for field-work and the estimated cost for the recess-season is Rs. 6,046, or a total of Rs. 22,930. Both the field and office work were examined by the Assistant Director and the survey found to have been well executed. The work was closely supervised by the Superintendent and the survey sheets carefully tested by the Inspectors. There is still a portion of Yandoon township to be re-surveyed. This would have been finished during the year, with the help of the local surveyors, but for the early advent of the rains. The work will be included in the survey programme for next year, as also parts of Pantanaw township, which are to be dealt with at the same time by the settlement party. Arrangements are in progress for the requisite revisions of survey prior to re-settlement in the Ma-ubin and Kyaiklat townships of the Ma-ubin district in 1904-05, and in the Dedayè, Pyapôn and Bogale townships (including part of Moulmeingyun township which was transferred to Myaungmya district) of the Pyapôn district the year after. Most of the country in the districts named is deltaic and subject to inundation, new embankments have been formed which materially alter the aspect of the ground, *kazins* are continually changing and the expansion of cultivation, in *pottas* and otherwise, is considerable, so that extensive revisions of survey after a lapse of years become an absolute necessity. This will be apparent when it is considered that during the period of settlement cultivation (within 12 years' time) and the corresponding revenue has more than doubled.

In order to provide up-to-date maps for the Revision Settlement Officer working in the Mandalay district a special survey staff was sanctioned. Advantage was also taken of this opportunity to re-draw a large number of *kwin* maps according to thugyiship boundaries as several thugyis have jurisdiction in the same *kwin* and the maps were unsatisfactory as working plans. The field staff employed consisted of one inspector, one sub-surveyor and eight field-surveyors, for six months, and the office staff of one Inspector and 10 computors and draftsmen for nine months. Work was begun towards the end of November 1903. As the survey progressed fresh cases requiring re-survey cropped up and the periods for employment were, after consultation with the Revision Settlement

Officer, extended by two months, but owing to the unusually heavy rainfall of June out-door work had to be stopped at the end of that month. The area re-surveyed was 49 square miles containing 20,037 acres of cultivation and that traversed 41 square miles, while the maps of 108 *kwins* were re-drawn. The cost, actual and estimated, of the operations amounts to Rs. 8,074. Both the field and office work were inspected by the Assistant Director and found to be of very good quality. The office work was also examined by the Director, who was satisfied with it. The Superintendent of Land Records who had charge of the operations, kept a strict watch on the work and frequently tested the accuracy of the survey. The maps and area statements were as soon as possible made available for the purposes of the Revision Settlement Officer. An area of 45 square miles still remains for revision next season.

The recess-work of the Hanthawaddy revision survey party referred to in paragraph 3 of last year's report was examined by the Assistant Director on two occasions and found to be in order. The maps were printed at the Government Press and utilized for the settlement and supplementary survey of the current year. Traces of the *kwin* maps were furnished to the settlement party.

Owing mainly to the remodelling of canals and their distributaries in the Kyauksè district an area of 35 square miles, containing 17,003 acres of cultivation, was resurveyed by a special staff composed of 1 inspector, 8 surveyors and a draughtsman, under the supervision of the Superintendent of Land Records. The work was properly checked and reported to be well connected with theodolite stations of the previous traverses. The cost of the operations, actual and estimated, is Rs. 3,426.

Special surveyors were employed to help in the annual re-survey for assessment purposes of cultivation in island *kwins* of the riverine area in Mandalay, Sagaing and Myingyan and in the Mandalay canal tract, in which extensive changes in the land occur, caused by the new irrigation there. In Mandalay 22,232 acres were surveyed by 6 surveyors working for seven months at a cost of Rs. 1,913. In Sagaing 6 surveyors in four months completed the survey of 13,732 acres at a cost of Rs. 823. In Myingyan an area of 21,775 acres was surveyed in three months by ten surveyors at a cost of Rs. 1,465.

Special surveys.

4. As foreshadowed in last year's report (paragraph 4) cadastral surveys by local agency were undertaken in the year in the districts of Katha and Tavoy, the former in charge of a special Superintendent (Mr. Purchase) and the latter under the local Superintendent of Land Records. The Katha survey was to provide maps for the settlement party, which is still at work in the district, and also resurvey some large blocks of new cultivation which the local surveyors had not the time to do. The survey in Tavoy was taken in hand to map up large blocks of cultivation outside of the supplementary survey tract which it was thought could suitably be included in the area to be dealt with by a regular settlement party which is to be brought into the district shortly.

In Katha field-work was commenced about the middle of November 1903. The staff consisted of 2 inspectors, 4 sub-surveyors, 12 field-surveyors and 3 computors. As the demarcation proceeded it was found that the areas for survey were much over the first estimate and owing also to the slow progress of the survey due to the scattered nature of the cultivation, the distances to be travelled and the unhealthiness of the country it has been found necessary to extend the operations into another season, during which the settlement party will still be at work in the district. In Banmauk and Pinlèbu townships almost the entire work has been executed on the triangulation system unconnected by theodolite traverse. This was unfortunate, but there were said to be local difficulties which prevented the instructions in the matter of such surveys from being carried out. The maps will, however, answer for settlement and assessment purposes, though not scientifically accurate. The survey in Mawlu township has been connected by traverse and in Tigyaing traversing which has been done on skeleton plots prepared in the Camp office has preceded detail survey. A total area of 101 square miles has been traversed; of this 50 square miles falls in Yinkè and Wettu circles, east of Katha, in which cultivation is altogether new. The area cadastrally surveyed

consists of 88 square miles containing 16,605 acres of cultivation, inclusive of 3,860 acres of revisions of survey in the supplementary survey tract. The average size of the field was 0·23 acre. Next season the field and office staff will work simultaneously in order that the Settlement Officer may be provided with the maps and area statements in time for his settlement. The field-work was tested by the Assistant Director and found to be of fair quality. The survey is scattered and mostly of a difficult nature, and allowance has to be made for this. The office work was inspected by the Director at Mandalay, where the party, like the settlement one, has been permitted to recess owing to the unhealthiness of Katha. The traverse computations were in order, but 'partals,' or check lines, across the cadastral sheets were insufficient in number. Work on the whole was satisfactory. The cost of operations during the year was Rs. 4,500 on traversing and Rs. 14,703 for the detail survey; in all, Rs. 19,203.

In Tavoy the area traversed was 12 square miles, and was done by 2 sub-surveyors working for four months from November 1903. The cadastral section started work in January 1904 and closed in April. The area surveyed in detail comprised 15 square miles, containing 6,429 acres of cultivation, and was executed, partly on the triangulation system, by 5 field-surveyors. For the computation and other office work 7 computors and draughtsmen were employed for a short period. The total cost for both field and recess amounts to Rs. 3,676, of which Rs. 1,336 is for the traverse portion and Rs. 2,340 for the cadastral. There still remains for survey 12 square miles in traverse and 13 square miles, containing 4,152 acres of cultivation, cadastrally, which will be undertaken early next open season so that the Settlement Party, which is to start work in the district next October, may include this area also in the settlement. The field work was inspected by the Officiating Assistant Director and favourably reported on.

The survey of Tavoy town on a large scale, which has been going on in sections for the past two years, was continued in the year of report. The work was done by two surveyors, who mapped 1,774 acres. The cost, which is paid by the Municipality, amounts to Rs. 1,304 for both field and office work. There still remains an area of 401 acres for survey which it is hoped to finish next year.

Fishery surveys.

5. No fishery surveys were undertaken in the year by special establishments.

Potta surveys.

6. In 22 districts special staffs were employed on the survey of *pottas*, partly on regular pay but chiefly by payment on the piece-work system. The total number of cases dealt with was 16,007, the area surveyed comprised 201,521 acres and the cost of the operations amounted to Rs. 85,102. The number of hands engaged for the work consisted in all of 29 Inspectors and 197 surveyors, working for varying periods. The fees realized came to Rs. 1,04,194, at mostly a fee of As. 8 per acre, except in Akyab, where the original rate was As. 6, but this had to be subsequently raised by As. 2 as it proved insufficient. In Thayetmyo the rate ranged from As. 3 to As. 6 the acre. In all cases but one the fees covered the cost of the survey and in several exceeded it. In Katha alone was there a deficiency of Rs. 55 on this head. The heaviest surveys took place in Amherst (57,433 acres), Pegu (30,215 acres), Toungoo (25,940 acres), Pyapôn (20,543 acres), Thatôn (17,676 acres) and Hanthawaddy (14,644 acres). The demarcation was generally found to have been well attended to, except in Toungoo, where much of the time of the surveyors is said to have been lost in getting applicants to mark the land. In such cases the applications, as remarked by the Commissioner, should have been summarily rejected. In Pegu owing to the rejection of several cases last year for inadequate demarcation more trouble in demarcating the lands applied for is stated to have been taken by applicants and thus the survey staff found their task considerably lightened. The surveys were on the whole efficiently performed. In Yamèthin the work of the special surveyors proved to be quite inaccurate and was consequently rejected and the surveys done instead by the regular staff. In Mandalay *pottas* were confined to the new canal tract. Special grant officers for the disposal of *potta* cases were appointed in Pegu and Amherst, in the former three officers for a space of seven months and in the latter one officer for a brief time. There was a slight falling off in the cases decided by the special grant officers in

Pegu as compared with the previous year, which is attributed to the transfer to other duty of an experienced and capable officer (Captain Nethersole) in the middle of the operations. Owing to the special grant officers in Pegu being unable to start work till early in 1904 it was deemed advisable to dispense with the greater portion of the survey staff sooner than anticipated. The Commissioner notes that the survey in Pegu seemed to be satisfactory in quality and financially. Special grant officers will be again needed in Pegu and Amherst next year, as applications for grants are very considerable in these districts.

Area under and cost of supplementary survey, Statement I.

7. The total area under supplementary survey was 41,919 square miles, with a total assessment of Rs. 22,203,617. The increase in the former over last year was 4,285 square miles, and in the latter close upon 18 lakhs. The main reason for the increase in the area dealt with by the supplementary survey is the addition of the Magwe and Lower Chindwin districts, which were under settlement during the previous year and thus not taken into account before, and the inclusion of 120 square miles in Sandoway, which were cadastrally surveyed two years previously and have now been brought under supplementary survey for the first time. The other changes are minor ones. In Thatôn there was a further erosion in the Kyaikto subdivision by the action of the Sittang river, by which 5 square miles were lost to the district. Mandalay was augmented by 2 square miles, due to accretions in the island tract, while 11 square miles were added to Sagaing owing to former discrepancies. The expansion in the revenue was practically general and was mainly due to the effect of recent revision settlements in Akyab (in the Rathedaung, Naaf and Urittaung townships) and Tharrawaddy (in the Gyobingauk and Tapun townships), original settlement in parts of Bassein and Myaungmya, the inclusion of a newly surveyed tract in Sandoway within the supplementary survey area, the full application of the new irrigation system in the Mandalay canal tract, the introduction of the settlement rates for the first time in Sagaing and Yamèthin, to the extension of cultivation in the ordinary course of husbandry, the assessment of time-expired grants and less fallow in Lower Burma, and to increased cultivation in Upper Burma owing to a more favourable agricultural season. In Magwe the settlement rates will not come into force till next year. Shwebo is still under settlement and although in the Upper Chindwin a small Land Records staff has been recently entertained to start the preliminary work in the Mingin subdivision, the settlement rates will only take effect from 1st July 1904.

The total cost on account of superintendence and inspection amounts to Rs. 3,71,035 and for the survey staff to Rs. 6,21,539; in all Rs. 9,92,574 against Rs. 9,10,363 the year before. The increase is due to the inclusion in the cost of the Magwe and Lower Chindwin Land Records establishments and to the addition to the Sandoway staff, for the reasons given above. The cost per square mile is Rs. 23·68, and per cent. of the assessment Rs. 4·26, in both cases slightly lower than last year. The cost rate per square mile notably decreased in Akyab owing to a more junior Superintendent being in charge and in Sandoway in consequence of a larger area dealt with by the supplementary survey, while there were marked increases in Pegu due to the appointment to the district of a senior Superintendent and to a strengthening of the subordinate staff combined with an error in the figures furnished last year, and in Sagaing to an increase in establishment and a heavy initial, but non-recurring charge in the starting of the new Land Records Office. The cost rate in respect to the percentage on the assessment noticeably decreased in Akyab due to less fallow, in Sandoway owing to a larger area under supplementary survey, in Mandalay because of the expansion of cultivation in the new canal tract, and in Minbu, Yamèthin and Myingyan on account of a better season. In Upper Burma the only two districts in which the cost per square mile is high are Mandalay and Kyauksè owing to their restricted areas, but, on the other hand, the districts are highly cultivated and consequently the cost per cent. of the assessment in them is by far the lowest for the section of country referred to. Again, in Mandalay the river blocks connecting island *kwins* with the main land are excluded from the total area of the supplemenrary survey tracts, which of course does not help to reduce the cost rate.

Submission of assessment-rolls.

8. In Lower Burma with a few exceptions in which the rolls were a day or two late, the assessment-rolls were punctually submitted.

In Upper Burma the standard of punctuality was not so good In Magwe the *kaing* rolls, due on 15th March, came in from 21st March to 30th April. The *mayin* rolls, due on 1st August, were not submitted till 18th August. This was due to lateness in deciding that the Land Records staff should do the assessment. In Mandalay only 8 *mayin* assessment-rolls, were submitted by due date. For the *kaukkyi* assessment only 11 rolls were punctually submitted. The rolls for the *kaukti* or *kaukyin* and the *kaingya* assessments were also late in nearly every case. Second visits to 1,625 *kwins* out of 1,910 led to delays of from 10 to 16 days in the submission of the *kyaukkyi* rolls in Meiktila. In Yamèthin the *kaukyin* and *kyaukyi* rolls were submitted a month late; the *kaing* rolls were in time. Various explanations are given for the delay, but the real reason would appear to be that this was the first year of assessment and that most of the staff were new to the work. Some excuse can be made for delay in the first year of settlement, but it should not recur. In Myingyan excellent punctuality was again observed, but the Deputy Commissioner remarks that this result was obtained only by the most strenuous effort and because the excellence of the crop rendered failures few and second visits unnecessary. The whole question of the date of submission of the various assessment-rolls in Upper Burma is under the consideration of the Financial Commissioner.

The experiment of surveyors visiting *kwins* in Upper Burma a second time to mark crop failures which occur subsequent to their first visits was continued during the year in the Myingyan and Meiktila districts and was also tried in the Yamèthin subdivision of the Yaméthin district. The result has been reported to Government, but orders in the matter have not yet been passed. The Financial Commissioner considers it inexpedient to reduce surveyors' charges to enable them to cope with the proposed extra work and thinks it would be better to temporarily employ an extra Myoôk, if necessary, to deal with remissions in bad years.

Office and record-rooms.

9. The register of transfers and changes [Register No. IX L. B., No. VIII U. B.] has, in most districts, been carefully kept up. But in Pegu the Deputy Commissioner complains that reports are not generally made by landowners. The attention of the local staff is being drawn to the matter. In most districts there is a large increase in the number of transfers reported and an adequate check has been maintained by the Land Records Staff. In Thatôn the register is popular so far as changes of ownership are concerned, but it is still difficult to get cultivators to report under the other heads.

In Upper Burma, Mandalay shows a very good use of Register No. VIII, but from most districts there come complaints of the apathy of the people and the difficulty experienced in getting them to report changes. Sagaing and Kyauksè report a marked improvement in the use of the register, but generally in Upper Burma greater attention to the matter is required.

Revenue Surveyors and thugyis' offices, are in general well kept up. An adequate amount of inspection has been done. In Akyab the Superintendent of Land Records is devoting his attention to those found deficient. In one thugyi's office in Sandoway a volume of Register No. I had been destroyed by white-ants. The *taikthugyi* was ordered to copy the whole register out again. Many offices in the Pegu district are reported to be in bad order. Inspection by the Superintendent has been neglected in the past. It should be attended to now. Thorough inspection was done by the Superintendents in Tharrawaddy and Prome. In Ma-ubin the Revenue Surveyor's house at Zayathla was burnt down, but everything was saved except a few survey instruments and forms. A marked improvement is noted in Bassein and in Myaungmya. In Thatôn the Dawlan thugyi's house was burnt and a number of records lost. The surveyor's offices are not all they should be in this district. As the Deputy Commissioner, Amherst, points out, safety from fire is not always easy to obtain, but such steps as can be devised are taken to reduce the risk. In Minbu district a surveyor's house was burnt down. The records were saved, but all the survey instruments were lost. In Magwe all records are still at

headquarters. All offices in the Mandalay district were inspected by the Superintendent of Land Records. They were in good order. In Yamèthin surveyor's offices have not yet been built on account of the impermanency of the charges. The Deputy Commissioner thinks that in view of the small salary and poorness of most of the surveyors, Government advances might be given to the more diligent to help to build their offices and houses.

In general it would appear that all records are now properly housed and that while ordinary risks of fire cannot be avoided, surveyors and thugyis are taking all possible measures to guarantee the safety of their maps and records. A marked improvement is generally noticeable.

The Toungoo and Tavoy District Land Records offices were inspected by the Financial Commissioner, and those of Akyab, Tharrawaddy, Minbu, Lower Chindwin and Sagaing by Commissioners.

The Directors and Assistant Directors of the year under report inspected the offices and record-rooms of 24 districts. The offices generally were found in good order. In Minbu, Thayetmyo, Magwe, Pegu, Prome and Myingyan the record-rooms were found in bad order and more attention must be paid to the standing orders on the subject contained in the District Office Manual. Generally it is noted that while the offices, which are immediately under the eye of the Superintendent, are in fair order the record-rooms, which are not under immediate observation, are in a more or less unsatisfactory condition. Personal supervision is absolutely necessary to introduce order and system into record-rooms, the more so that the record-keepers in Burma are generally inferior intellectually to the clerks who run the office. A good start is all that is required in a record-room. Once fairly launched they run smoothly and automatically.

Sufficient attention is not paid to the instructions regarding apprentices contained in Land Records Circular 2 of 1898. This is an important matter and the more formal the grant of the certificate is made the better. It is supposed to be a guarantee of sound survey qualifications and should carry considerable weight in making appointments. A strict observance of the rules on the subject is now being insisted on.

The Pegu and Prome offices are only in fair order. There is a marked improvement in the Tharrawaddy, Henzada and Toungoo offices, which reflects credit on the Superintendents concerned. The exchange of tubes between Minbu and Thayetmyo suggested in last year's report has just been effected and these record-rooms will soon be brought into regular method and arrangement. Little progress has been made with the alterations to the Magwe record-room. The matter is still in the hands of the Public Works Department. The Hanthawaddy record-room is most unsuitable, but is the best that can be devised in the circumstances. The Bassein and Sagaing record-rooms seem unduly small. In Akyab a new office and record-room is about to be built and in Kyaukpyu, where there is none, a record-room is under construction. In Prome wholesale destruction of valueless, old records, the accumulations of years, was ordered by the Director and good progress has been made. The destruction of old files of an impermanent nature is being insisted on in all offices and this, with a systematic destruction of B and C papers, will considerably relieve the congestion in many record-rooms. There is a measure of confusion in the Ma-ubin record-room as the records for the new Pyapôn district are still kept there. This will be relieved when the record-room at Pyapôn is completed. A new record-room is required in Amherst district. The record-room at Tavoy requires some improvements. Mergui is not in the best order. The new record-room at Katha is not yet completed. The Shwebo record-room is now reported as in fairly good order. Deputy Commissioners have generally paid regular visits, as prescribed, to record-rooms. It is only by constant supervision and inspection that record-rooms can be kept in order.

Maintenance of the survey.

10. During the year minor revisions of survey and survey of grants which have come under cultivation were carried out by the ordinary staff in Akyab, Kyaukpyu, Hanthawaddy, Prome, Bassein, Thatôn, Amherst, Tavoy, Thayetmyo, Katha, Sagaing and Lower Chindwin.

In the Pegu district it has been arranged that the Survey of India will survey the " Sittang accretions " of 120 square miles. Proposals have now been submitted for a revision of 573 square miles. Extensions of cultivation have been heavy and the ordinary staff has been quite unable to cope with the cadastral details of the numerous grant extensions. In Tharrawaddy 22,463 acres were surveyed by the local staff in the unsurveyed parts of the district. In the settled portion a small area still requires revision of survey. In the Ma-ubin district 21,112 acres of survey in 158 *kwins* were revised by the local staff. Extensive revisions are still being carried on by the special staff in anticipation of revision settlement. This party will also work in the Pyapôn district, where extensions of cultivation have been enormous and field boundaries are perennially changing, especially in low-lying and flooded lands. An area of 8,881 acres was revised by the local staff and extensions amounting to 2,358 acres were resurveyed. In Bassein no further revision of survey is necessary. Henzada still reports 66 *kwins* as requiring resurvey. In Myaungmya 8,082 acres were resurveyed by the local staff. The special staff working in Ma-ubin will undertake the resurvey of 71,950 acres in the Myaungmya district, while smaller areas will be undertaken by the local staff. In Toungoo the local staff surveyed large extensions amounting to 11,888 acres during the year. They also revised 6,172 acres in 56 *kwins*, of which 6 whole *kwins* with an area of 4,568 acres were resurveyed. The extra cost was only Rs. 307. The work was thoroughly checked and was found of fair quality. A local surveyor also traversed and cadastrally surveyed a new *kwin* with an area of 200 acres. The revision of survey referred to last year will be undertaken by a special staff next season. In Prome, also, revisions of survey are to be undertaken next year by a special establishment. In the Amherst district the area for resurvey is estimated at 55 square miles. Arrangements will shortly be made to have this done by a special staff, so as to be in advance of the revision settlement. In Minbu no revision of survey is necessary, but arrangements have been made to redraw a number of maps the original features of which have been altered by the remodelling of canals, &c. In Magwe 11,084 acres of *yas* were newly surveyed and 8,947 acres resurveyed and in the paddy-tract 1,127 acres were surveyed and 2,867 acres resurveyed. No further resurveys are considered necessary. In Mandalay the local staff revised 12,947 acres in the settled tract and 950 acres of shifting cultivation. At present the revision of detail survey in the Canal tract is being suspended as the canal with its distributaries and network of water-courses is producing an immense change in the topography of the country. It is estimated that it will take fully five years before permanency is attained. The area in the Canal tract which will eventually require resurvey is estimated at 100,000 acres and for this a special staff will be provided.

In Shwebo in addition to general revision and survey of extensions over 588 square miles an area of 46 square miles which has come into existence since the survey has been measured up and mapped. In this way maps have been at once made available for the Settlement Officer. Steps are being taken to have revised maps, where necessary, redrawn and reprinted. In Kyauksè an area of 22,697 acres has been resurveyed by a special staff. In Myingyan revisions are anticipated in the area under the Kanna irrigation tank.

Generally an adequate check has been exercised over these resurveys by the local officers.

The ordinary Land Records staff also surveyed *pottas* as follows :—Akyab : 2,546 acres, Hanthawaddy : 3,776 acres, Pegu : 2,535 acres, Ma-ubin : 685 acres, Pyapôn : 104 acres, Henzada : 4,887 acres, Thatôn : 12,990 acres, Toungoo : 1,443 acres, and Tavoy : 79 acres.

A certain proportion of these surveys were in most districts inspected by Superintendents and Inspectors of Land Records.

Preservation of permanent survey marks.

11. District reports generally show that an increasing amount of attention is being paid to this very important subject. It is gratifying to find that in many districts the Thatôn plan referred to in paragraph 11 of last year's report is being followed. It should be universally adopted. Replacements are, in most districts, made only by inspectors or selected surveyors and this, next to an accurate

location by theodolite, is the closest approach to guaranteed accuracy that can be suggested. In Magwe instead of immediate replacement the spot has been carefully marked and new pipes will be put down next year. This is a dangerous procedure and should not be repeated. In Henzada, Hanthawaddy and elsewhere replacements were found by the special revision survey parties operating in the districts to be woefully inaccurate. The risk of error is great and special care must be taken to obtain accuracy, so far as possible.

In several districts it is noted that *ywathugyis* who are appointed to collect revenue take a keener interest in the preservation of survey marks than village headmen under *taikthugyis*. This is not unnatural, but steps should be taken to impress upon all *ywathugyis* their responsibilities in this respect.

In Rangoon town the theodolite traverse stations lost in 1902-03 have been replaced, but it has not been found possible to restore the triangulated stations on the Pazundaung creek. The state of affairs in Pegu district is very bad and the preservation of survey marks has been entirely neglected in the past. The Deputy Commissioner is alive to the seriousness of the matter and has issued stringent orders on the subject. The seriousness of the question will be felt when the proposed revision surveys are taken up, but the sub-surveyors will also be able to assist largely in the replacement of marks which have been lost. In the Irrawaddy division, the Commissioner (Mr. Porter) has personally interested himself in the matter with the result that there has been an all-round improvement. Strenuous measures have also been taken in Toungoo. In Amherst many marks have been lost, it is said, because they were originally placed in dense jungle which has subsequently come under cultivation. In Mandalay a large number of missing and broken marks were replaced by the Revision Survey Party and these were handed over to the thugyis concerned. A marked increase of interest on the part of thugyis is noted. In Yamèthin preservation of survey marks has been totally neglected up to date: but efforts are now being made to preserve such as are left.

In general, however, there is a noticeable improvement. Inspectors and Revenue Surveyors have done an adequate amount of inspection and where necessary replaced lost pipes. There is evidence also that headmen are taking this part of their duties more seriously.

Miscellaneous duties.

12. A considerable amount of check of tax-tickets and cattle-death registers was done in most districts. Tampering with the original entries was found to be common in Prome and the Commissioner has called for a further report on the subject. In one village charge in Pyapôn the headman made over his tax-tickets to a villager who tampered with one of the tickets and succeeded in getting Rs. 20 excess out of a cultivator. The villager was convicted of forgery and the headman was dealt with departmentally. In Kanni circle of Bassein amounts in excess of the correct demand were exacted by the *taikthugyi*. He has been dismissed. In Minbu falsification of tax-tickets was found in one case and the thugyi was removed. In Katha a thugyi was dismissed for falsification. With the above-quoted exceptions no frauds of any other kind were detected: though the usual number of minor errors of copying are again reported.

Amongst the miscellaneous duties of the department the demarcation of grazing-grounds and inspection of demarcated grazing-grounds are important. In Akyab 34 new grazing-grounds of an area of 3,790 acres were allotted. Of these 8 were demarcated during the year and 15 are in course of demarcation. In addition a large amount of re-demarcation was done. Thirteen cases of encroachment were detected: the trespassers being in all cases evicted. Attention is being devoted to re-demarcation in Kyaukpyu, where the subject has been neglected formerly. In Rangoon Town district more than a half of the permanent boundary marks laid down during the demarcation operations of 1895—98 were visited during the year. Of those visited 224 marks were broken and 142 missing. They were all repaired or re-placed at the expense of the land-holders. Good work is now being done in Pegu in the matter of demarcation. During the year 26 grazing-grounds with an area of 8,103 acres were reserved and demarcated. Trespassers are promptly dealt with. An effort is now being made to complete the reservation and demarcation of grazing-grounds proposed by the Revision Settlement Officer. These the Deputy

Commissioner complains were neglected by the then Superintendent of Land Records (Maung San Shwe). In Bassein 54 reserves, with an area of 4,660 acres were made, while 167 acres were thrown open to cultivation. There were 186 prosecutions for trespass and 95 persons were convicted and punished. The Commissioner (Mr. Porter) complains that village headmen do not take the interest they should in maintaining demarcation marks. Evictions and prosecutions were numerous in Henzada. In Myaungmya 38 grazing-grounds with an area of 11,876 acres were reserved during the year and proposals to take in 20 more with an area of 10,800 acres are on foot. There were numerous prosecutions for encroachments, and these were generally punished with fine. The Commissioner remarks: "As a rule fines inflicted by Township Magistrates in such cases under Rule 69 are most inadequate. They do not seem to realize that unless the amount of fine is sufficient to deprive the trespassers of all profit arising out of the trespass that he will encroach again." In Toungoo the demarcation was effected of 34 grazing-grounds proposed by the settlement and now finally allotted as also of 2 other new grazing-grounds. The demarcation of 58 old grazing-grounds was revised. Special attention has been, and it is hoped will continue to be, paid to demarcation in Amherst. A new allotment of 3,102 acres was made during the year and another of 659 acres is under consideration. In Tavoy two grazing-grounds were demarcated during the year. In Mergui, where there are 10,599 acres of reserved grazing-ground, the Deputy Commissioner objects to the numerous private grazing-grounds, on which the owners levy fees for grazing. This matter, together with the question of their assessment, will doubtless be fully considered by the Settlement Officer who will begin work in the district in November 1905.

On the whole good work has been done on this subject and much attention is being paid to the inspection of demarcation, not only by the Land Records staff but by District Officers. This after all is one of the most useful lines that their inspections of *kwins* can take.

The topographical maps on 1-inch or 2-inch scale are in general kept up to date. This is a most important matter from a political and imperial point of view and too much attention cannot be paid to it. This point is always emphasised by the Director and Assistant Director on their tours of inspection and the general standard of maps in the Province is good. The re-distribution of areas consequent on the formation of the Pyapôn district will necessitate a revision of topographical maps for the Ma-ubin, Myaungmya and Pyapôn districts.

In Mandalay supplementary survey operations in connection with the cantonment house-sites and agricultural lands continued to be under the control of the Superintendent of Land Records. The total number of house-sites taxed during the year was 2,599, contained in 69 blocks. The area cultivated rose from 754 to 815 acres and the marking of crop-failures was considerably less. The revenue increased by Rs. 309. These increases are doubtless due to improved irrigation from the Patheingyi distributary of the Mandalay canal.

In Shwebo assistance has been given by the Department in the acquisition of land for the Shwebo canal. A large-scale survey of the Shwebo Municipality and Civil station has been made during the recess-season out of hours by two surveyors and the survey on the 64-inch scale of the betel-vine gardens in Ye-u and Tabayin townships has been partly done and is still proceeding.

Village headmen scheme.

13. In Kyaukpyu 14 circles were broken up during the year into village headmen's charges. In Hanthawaddy the *ywathugyi* system was introduced into three more circles: and in Prome into one. The work of *taikthugyis* in this district was indifferent. In Ma-ubin only six circles remain under *taikthugyis* and in Pyapôn only four. From Bassein come complaints that the thugyis with few exceptions take but little interest in supplementary survey work. In Henzada there has been a marked improvement in the work of thugyis. The revision of the existing sanctioned scheme for the collection of revenue by village headmen has now been completed and sanctioned. In Myaungmya the village headmen system was introduced into five more circles during the year. Three *taikthugyis* were dismissed and two retired. There now remain only six *taikthugyis* in the district. The con-

duct of one is under enquiry; another was fined Rs. 100 for bad work in his circle and for neglecting to exercise sufficient control over his staff; while another was fined Rs. 20 for neglecting permanent survey marks. In Toungoo the retirement of two circle thugyis was sanctioned and the vllage headmen scheme will be introduced. The system is said to be popular and is working very satisfactorily. In Thatôn a *taikthugyi* has been dismissed for frauds in connection with compensation for land acquired. A *ywathugyi* decamped with his land revenue collections, but he was caught, arrested and the money recovered. Headmen as a rule worked well, though many are discontented with their small commission. In Amherst a circle thugyi who had been neglecting the supplementary work of his charge has been punished by having the survey work entrusted to a revenue surveyor, the expense of which arrangement the thugyi will have to meet. Final sanction to the revised scheme has just been received and changes when practicable will be introduced from 1st July 1904. In Tavoy *taikthugyis* did well. In Mergui the village headmen system prevails except in four circles. In Thayetmyo the Nyaungbinzeik circle was brought under the village headmen scheme during the year under report.

Conduct of the Supplementary Survey staff.

14. The work of Superintendents has in every case been well reported on and the best are singled out for special mention in paragraph 25 [Services of Officers.] Probationers, who have been put in charge of the lighter districts, have also generally given satisfaction: but two of the later-joined men have been unfavourably reported on. They are now undergoing a further course of training. As regards the Subordinate staff discipline has been generally good. The Akyab establishment is rather undisciplined, but the new Superintendent of Land Records is taking them firmly in hand. It speaks well for Inspectors as a class that all over the department only eight of their number were punished during the year or resigned on account of friction with their staff. In Myingyan an Inspector was promoted to a Myoôkship. For Revenue surveyors the general average is quite as good: only 23 were removed or dismissed during the year, in not a few cases for offences quite separate from their professional duties. In only one case was a surveyor detected taking money from cultivators. In Tharrawaddy several cases have come to light in which revenue surveyors are suspected of conspiring to defraud chetties advancing money on the security of land. These charges are under judicial enquiry.

Generally the tone of the department has been very good and the faults detected have only been small and punishable with minor penalties.

Inspections of field-work, Statement II.

15. During the year the Director and Assistant Director inspected field-work in 18 districts. Forty-five *kwins* were checked, falling in 13 surveyors' charges under 21 inspectors. In 19 *kwins* the work was found to be good, in 23 fair and in one *kwin* each of Myingyan, the Lower Chindwin and Thayetmyo, poor. Errors detected were in soil-colouring, registration, survey of extensions, crop-marking and marking of crop failures, fallows, holding-marking, number of holdings. Sale, mortgage and tenant statistics were generally well recorded.

Mr. Todd-Naylor when Commissioner of Arakan inspected field-work of one *kwin* in Sandoway, and as Commissioner of Meiktila examined that of six *kwins* in Meiktila and two *kwins* in Kyauksè.

The number of *kwins* inspected by Deputy Commissioners declined from 145 last year to 121 during the year of report. Pressure of other work is the reason generally given for the decrease. Major Green in Yamèthin did 14 *kwins* and Major Aplin in Kyauksè inspected 13. Messrs. Thurston, Christie and Metcalfe did 11 each. More attention should be paid to this important branch of their duties. Except in the Pegu and Irrawaddy Divisions, the excuse of exceptionally heavy general work is hardly valid.

Inspections by Subdivisional Officers increased from 417 to 578. Amongst the most energetic were Maung Hla Paw Tun, K.S.M., Kyaukpyu (27 *kwins*); Maung Kyaw Nyein, Pegu (17); Mr. Couper, C.S., Paungdè (12), Mr. Lewisohn, C.S., Myaungmya (13); Captain Bowen, Pyinmana (11); Mr. Richardson, Myingyan (30). Maung Tin Gyaw, T.D.M., Henzada; Maung Aung Zan, K.S.M.,

Kyaiklat, and Maung Po of Kyauksè also did well. Many Subdivisional Officers were, however, extremely remiss in this part of their duties notably the Subdivisional Officer of Buthidaung, who did no inspection, the Subdivisional Officer of Shwegyin, and the Subdivisional Officer of Moulmein, who for the second year in succession did no inspections. An explanation has been called for. In Mandalay Subdivisional Officers have neglected their duties in this respect, and an explanation has been called for. In Katha, Shwebo and the Lower Chindwin Subdivisional Officers were very remiss. In the Meiktila Division the Commissioner remarks:—"In this division where *kwin* inspection in the reaping season is practically substituted for remission work much more should be done by Subdivisional Officers and Township Officers."

The inspections of Township Officers rose from 973 to 1,178 in the year under report. Maung Aung Nyein of Paungdè did 14 *kwins*; Maung Bu Thein, Thayetchaung, 24, while Maung Po Thu Daw, Ôkpo; Maung Hlaw, Kanaung; Maung Paw Shun, Kyaukyit; and Maung Lu Maung, Sagaing, are also singled out for special mention. On the other hand there are numerous cases where no inspections at all or very few have been done by Township Officers. In all such cases an explanation has been called for by the Deputy Commissioner.

Amongst Commissioners, Messrs. Todd-Naylor, Hartnoll, and Houghton have interested themselves chiefly in this important matter while most Deputy Commissioners try to keep their subordinate officers up to the mark. It should be remembered that a moderate general average is far more valuable than a large total of inspections contributed by only one or two officers. Such a general distribution of inspection would more than double the total and would ensure more general and useful results.

In Akyab the Superintendent did many thorough inspections which were much needed as the work here has fallen badly behind. In Kyaukpyu an area of 140 acres was discovered unassessed in Kôkko circle. The thugyi was dismissed. In the Central and Southern townships of Sandoway there are certain *kwins* that have not been sufficiently attended to by Inspectors. This should be remedied next season. In Hanthawaddy some portions of the Northern part of the district might receive more attention. The amount of field inspection done in Pegu both by the Superintendent and Inspectors is inadequate and particular attention must be paid to this matter. There has been far too little supervision in the past. In Tharrawaddy there is a marked improvement both in quantity and quality. In Prome the Superintendent should pay more attention to the more outlying parts of the district. Work in Pyapôn was somewhat disorganised and there was a falling off in inspection. Better results should be shown next year. Personal energy and close supervision on the part of the Superintendent (Mr. Johnson) produced an increase of inspection of 66 *kwins* in Bassein. In Henzada, Myaungmya, Toungoo and Thatôn good and ample inspection was done.

Owing to the change of Superintendent there was a large falling-off in inspections in Amherst: while the work of Inspectors was also less owing to the illness of the Mudôn Inspector: his employment on extensive land acquisition changes in the staff and survey of salt lands. The special surveys in Tavoy took up much of the Superintendent's time. In Mergui the work of the Superintendent and Inspectors was quite inadequate. The Deputy Commissioner has remarked upon it and an improvement will doubtless result. The Superintendent in Thayetmyo also did too little field-work: but the work of the Inspectors was adequate and good. In two charges in Minbu the work was very bad. Inspection in Magwe was good. In Mandalay inspection was generally good and led to the detection of numerous mistakes in the application of the new canal rates. In Katha good work was done. The inspection in Shwebo was very good. The Superintendent, Mr. Wood, did 163 *kwins* himself.

Survey errors were numerous and one Inspector is being called upon to explain bad supervision. In Sagaing inspections have improved both in quantity and quality. Work in the Lower Chindwin and Kyauksè was good as also in Meiktila. The work in Yamèthin is not yet on a very satisfactory basis owing to the inexperience of the new staff. There is scope for the energies of the new Superintendent. The work in Myingyan is again reported good.

The total number of holdings checked by the Land Records staff and by District officers was 487,144, in 92,034 of which errors were met with; but this does not convey a true idea of the quality of the work, which can only be gauged by a reference to the detailed abstracts of errors furnished monthly by Land Records offices for work performed by the regular staffs alone. According to these the percentage of error discovered amounts in survey to 18, chiefly mistakes of under half an acre, in fallow and crop marking to 2, in classification and rates to ½, and in statistics to 5. The resulting *net* increase from these errors totals 4,886 acres in area and Rs. 11,022 in revenue.

Training of Civil officers in Survey and Land Records work.

16. During the year eight Assistant Commissioners and 13 Myoôks received a full course of instruction in Surveying and Land Records work, and all qualified by the required tests. Of the former five and of the latter seven did particularly well at the examinations. The period of training of one of the officers was, owing to ill health, extended by a fortnight. At two centres no less than three officers each were posted. It would be well to limit the number to be trained at a place to two as otherwise the Superintendent's time is taken up with this duty in detriment to his regular work. It is advisable also to so post officers that their period of training may fall within November to February, when field-work is at its height. These two points were noticed before.

Survey Schools, Statement III.

17. There has been no change in the year in the number and disposition of Survey schools maintained by Government, which continue at 18. All but six of these are accommodated in Government buildings, private houses being rented for the others. The school session begins in May and ends with the Syndicate examination in April following. The number of pupils on the rolls on the 31st March was 455, of whom 140 were free pupils, the rest paying the school fee of Re. 1 or Rs. 2 per mensem. The average number of pupils on the rolls was 464, and of days the schools were in session 267. There was a marked falling off in numbers in the year due in great measure to the application of the new tentative rule making the Fourth Standard compulsory for admissions into the Lower Burma schools, which has operated adversely to their interests. A report on the working of this measure is to be submitted shortly to Government. The classes mostly were regularly attended except at Mônywa and Yamèthin, where the attendance was unsatisfactory. Scholarships to the number of 68 of the 1st grade and 134 of the 2nd grade of the respective value of Rs. 10 and Rs. 5 each per mensem were given to deserving scholars. The cost on this account came to Rs. 14,913. In prizes a sum of Rs. 480 was allotted to the various schools, according to their relative strength, and awarded on the result of a local test examination. Only 33 boys of the total number were holders of the Seventh Standard certificate. Pupils who are sons of *thugyis*, village headmen and agriculturists were in the proportion of 2 to 1 to sons of traders and others. Sixty-nine passed candidates are reported to have obtained permanent work and large numbers secured temporary appointments. More boys would obtain immediate employment were it not for the strong ties of home and the general unwillingness to go to other districts. The total expenditure on schools amounted to Rs. 39,896 against an income of Rs. 6,377, which gives the net cost at Rs. 33,519. The cost thus of educating each pupil comes to Rs. 72, which is higher by Rs. 10 than that of last year, due to the diminished attendance in the year of report. The number of candidates from Government schools who qualified at the Syndicate examination of April 1904 were 256 in Surveying, 223 in Arithmetic and 104 in Revenue Law, or 66, 59 and 27 per cent. respectively, of the number in each subject presented for examination. In surveying, the results are very satisfactory, all but the Katha and Mônywa schools having done well, while Pakôkku, Sagaing, Bassein and Henzada passed the largest percentage of pupils. The passes in Arithmetic were decidedly good, but in Revenue Law there was a remarkable decline owing chiefly to but few successes in Upper Burma. The "Clancey" medal for proficiency in surveying was won by a pupil of the Pakôkku school. The teachers have as a class worked well, with the exception of those of Yamèthin, Mônywa, Katha and Insein, while the men whose services have been specially brought to notice for energetic

and capable work are the teachers of Henzada, Bassein, Moulmein and Pakôkku The schools were visited from time to time by the Superintendents responsible and in Pakôkku by the Deputy Commissioner. The Pakôkku school was burnt down by a destructive fire in town and nearly the whole of the Government property, including mathematical instruments, destroyed. The loss is estimated at Rs. 694. The schools were inspected by the Director or Assistant Director, except at Akyab, Kyaukpyu, Prome, Ma-ubin and Amherst. On the whole the schools were found in good order and well managed, and they adequately serve the purpose of the department. The school at Mônywa was inspected by the Commissioner of the Sagaing Division.

SECTION II.

AGRICULTURE.

18. *Collection of Economic Products.*—Considerable collections are made, through the media mostly of District Officers, of botanical specimens, food stuffs, animal and vegetable products, industrial articles, crop-destroying insects, manures in relation to agriculture, and the like, for the Indian Museum and Imperial Institute, and for the Inspector-General of Agriculture, Reporter on Economic Products, Agricultural Chemist, Cryptogamic Botanist and Government Entomologist. Specimens of the following products were obtained and forwarded, chiefly in connection with the programme of collections of economic products for the Reporter on Economic Products, *clereodendron inerme, citrus medica, cannaroceæ, capparis sepiaria, cycas siamensis, edgeworthia gardneri,* Copard furs, *ocimum basilicum, carapa moluccensis, diospyros kaki, cascaria graveolens, cuminum cyminum,* famine foods, *chrysophyllum roxburghii, fragræa fragrans, dipterocarpus turbinatus, andropogon citratus, indigofera anil, melastoma malabathricum,* food and fodder for cattle, *acacia concinna, derris elliptica, celastrus saniculata, eagroca obovata, blumea balsamifera, dillenia, pentagyua,* and others. Some of these were in continuation of previous collections, but most were new subjects. A note on yams (*dioscorea spp.*) prepared by the Reporter on Economic Products was circulated to all Deputy Commissioners and Superintendents of States who were asked to co-operate in procuring different varieties of the product and furnishing certain required particulars. In nearly all cases the desired specimens and information were supplied and transmitted, as received, to the Reporter. Certain food-grains, fodders and oil-seeds were applied for by the Agricultural Chemist to the Government of India and similarly procured and forwarded. The Government Entomologist desired to be furnished with specimens of insect pests destructive to garden and field crops and fruit trees, including particulars of destruction caused, etc., with a view to recommending measures for dealing with the pests, and supplied instructions in the matter which were duly circulated. Specimens of such insects are now being forwarded.

19. *Indian Art Exhibition.*—No little work was imposed on the office in the closing of the provincial accounts relating to the Delhi Exhibition, returning of exhibits, and so forth, all of which were satisfactorily settled. The medals and certificates obtained by prize winners at the Exhibition were presented to them by His Honour the Lieutenant-Governor on the occasion of the holding of the Provincial Art Competition at Rangoon.

Art exhibitions.

Provincial Art Competition.—The Provincial Art Handicrafts Competition, the fourth of its kind, was held in Rangoon in January 1904, under the patronage of His Honour the Lieutenant-Governor, who gave away the prizes towards the close of the Exhibition. The Director and the Art Officer arranged the programme and details. There were a large number of exhibits both from local and district artizans. Exhibits to the value of Rs. 5,038 were sold to the public besides some Rs. 3,000 taken by exhibitors at the side shops. Except in the silver-work classes there was practically no competition and the exhibits in wood-carving and ivory-work were very poor. The ivory work of Burma is stated by the Art Officer to be as far behind the wood-carving as the wood-carving is behind the silver-work. The silver-work was of a high class.

At the next competition workmen will be graded according to classes. This will give the younger men a chance of winning a prize. At present they have little chance against the masters.

20. *Agricultural Shows.*—Agricultural shows were held in the year, as hitherto, at the fixed centres of Kyônpyaw (Bassein district), Letpadan (Tharrawaddy district) and Sagu (Minbu district); and also at the following new centres, *viz.*, Bhamo (Bhamo district), Taunggyi (Southern Shan States) and Maymyo (Mandalay district). They were all successful, except Maymyo, which was a failure from an agricultural point of view and will not be continued so far as this Department is concerned. A Government grant was also given to the Rangoon Horse Show. The Director was present at the Minbu, Bhamo and Maymyo Shows. The Superintendent of the Civil Veterinary Department, Major Evans, assisted at the Minbu, Kyônpyaw, Bhamo and Taunggyi Shows, and the 2nd Superintendent, Mr. Rennie, at the Kyônpyaw and Letpadan Shows.

The Inspector-General of the Civil Veterinary Department again allotted a sum of Rs. 1,000 for the encouragement of cattle-breeding by agriculturists, and gave three large and three small silver medals for distribution at the Kyônpyaw, Letpadan and Sagu cattle-fairs for the best indigenous bull buffalo and bull oxen belonging to the landholding or cultivating class. In Sagu the oxen were inferior specimens and the smaller medal was consequently also awarded to the bull buffalo class. It is intended next year to renew the show at Pyawbwè (Yamèthin district). The Superintendent of the Civil Veterinary Department in Burma also gave out of his allotment a sum of Rs. 400 in prizes for foals of Government stallions, of which Rs. 200 each went to Letpadan and Sagu. Concessions were very kindly allowed in favour of exhibitors and exhibits at these shows by the Burma Railways Company and the Irrawaddy Flotilla Company, and full advantage taken of the same. The cost of the several shows held in the year, including the Imperial and Provincial grants is exhibited below:—

Show.	Provincial grant.	Imperial grant.	Total cost.
1	2	3	4
	Rs.	Rs.	Rs.
Kyônpyaw	1,068	250	1,318
Letpadan	1,350	250	1,600
Sagu	1,259	190	1,449
Bhamo	1,128	150	1,278
Taunggyi	677	...	677
Maymyo	1,055	100	1,155
Total ...	6,537	940	7,477

Kyônpyaw.—This show was even a bigger success than the last, and many exhibits were sent to it from the surrounding country and from Henzada district, but none came from the adjoining districts of Ma-ubin and Myaungmya. The people of the place appear to have been more interested in the show than before. The exhibits in the cattle-breeding classes were very fair. Plough bullocks were numerous and good, but ponies were poor and it is thought that light-weight ponies should be excluded. Burman milch cows and mares that foal at a tender age will also not be allowed in future. Agricultural produce was of good quality. A large number of silver bowls and several gold medals presented by well-known Burman gentlemen in the subdivision formed a feature of the show; the majority of these were awarded as extra prizes in the live-stock classes. The Bassein millers once more came forward with liberal money prizes for certain descriptions of market paddy and threshing and winnowing machines, but there were no exhibits of the latter class, while the paddy exhibits were fair. Much of the success of the show was due to the untiring energies of the Subdivisional Officers of Ngathainggyaung and Henzada, U Po Hla and U Tin Gyaw, T. D. M.

Letpadan.—The show was not so well attended as last year and the exhibits were fewer in number, but of better quality. It was on the whole a success.

Cultivators are said to be beginning to understand that only superior animals stand a chance of winning prizes. The animals exhibited were fine specimens, especially the plough oxen. The paddy exhibits were very good. A silver cup was presented by a local resident. Credit is due for the arrangements in connection with the show, which were all that could be desired, to Maung Gyi, Township Officer, Letpadan, Maung Lu Gale, Secretary to the Letpadan Municipality, and Mr. Gaudoin, Resident Excise Officer at Letpadan.

Sagu.—The show was practically confined to the Minbu district, though open to the whole division. Buffalo bulls were a good lot but not so the oxen. Cart and trotting bullocks were fine specimens. Ponies were fair, and foals of Government stallions good. Crop produce was on the whole good, but agricultural implements were poor. The show was a decided success and though the entries were not so numerous in some cases as last year the quality was better. The people seem to evince a real interest in the show.

Bhamo.—The number of entries for the different classes was not large, nevertheless, considering that this was the first show of the kind in the locality, it may be assumed that a good start has been made. The buffaloes were of a good stamp; the exhibits of produce and implements numerous and of a fair standard; oxen were poor, ponies moderately good. Subsequent shows will no doubt prove better than the one held, and it is hoped that they will also become the occasion of annual cattle fairs apart from but simultaneous with the shows.

Taunggyi.—An industrial exhibition was held as an adjunct to the agricultural show, and both proved to be most successful. No Arts and Crafts exhibition had ever been previously held and the cattle show may with reason also be considered to have been the first, since previous shows were held on very short notice and were extremely local in the area represented. In the cattle show the buffalo and pony classes were very good. The display of oxen was not so good, which was perhaps due to the fact that the caravan traffic season had just begun. The buffalo, however, is essentially the cultivator's animal and the exhibits were excellent. The most encouraging feature, however, was the genuine interest taken both by the chiefs and the people in the show, and the attendance was large. The Arts and Crafts exhibition was particularly successful, both in the number of the objects exhibited and the high excellence obtained in several of the classes. The display of gold and silver work, of plain and figured silks, of pottery and woven bamboo would have taken high rank anywhere. The success of the exhibition was due to the efforts of the Divisional Officers, Messrs. C. E. Browne and D. M. Gordon, who are well known to many of the successful competitors.

Maymyo.—A combined flower and agri-horticultural show was held for the first time, the Director having charge of the latter section only. The show was by no means a success on the agricultural side and will not be continued. Maymyo, the Commissioner reports, is not a suitable centre for an agricultural show, because except for a few Shans and Dannus the place is inaccessible to the agricultural population of the district generally. The cattle classes were somewhat disappointing, but garden produce showed up fairly well.

21. There are five experimental gardens maintained by Government, namely, those of Bhamo (Sinlumkaba), Chin Hills (Falam), Katha (Katha), Myitkyina (Myitkyina and Sima) and Southern Shan States (Taunggyi). The last of these is the most important and gives the best returns. None of the gardens pay their way, but they serve as good object lessons to the people. The total expenditure in the year amounted to Rs. 8,425 while the receipts from the sale of garden produce came to Rs. 1,869, the net cost to Government thus being Rs. 6,556. Apart from this a sum of Rs. 1,367 was spent in the distribution of seeds from headquarters. The Bhamo and Falam gardens are now in their fifth year and the Katha in its third. In Bhamo one head and four under-gardeners are employed, in Taunggyi one head and three under-gardeners, and in each of the others one gardener only. The services of a well-experienced gardener Mr. Colyear, were engaged towards the end of the year for Taunggyi, so that much improvement in this garden may be expected in the ensuing season. One probationer was certificated during the year from Taunggyi.

Experimental gardens, Statement IV.

Bhamo.—The results of the year were fair and progress satisfactory. The climate is unsuitable for the culture of the more delicate and thin-skinned fruits, such as peaches, apricots, cherries and nectarines, and further experiments for this class of fruit might well be discontinued. On the other hand, hardy fruits such as pears, apples and nuts promise to be successful and there is a good opening for these, as a considerable trade is carried on yearly in the indigenous kinds and the Kachins have realized that there is a large demand for this class of fruit in Bhamo and now make long journeys into China to procure them. It is proposed to distribute some of the young stock of pears and apples which have been raised in the orchard among the more intelligent headmen and it is hoped thus to help the industry. A large number of young trees was added to the stock of the orchard by grafts and cuttings. The latter method of propagation was tried for the first time and the results are said to be distinctly good. Peaches were specially abundant, but it is not expected that they will mature. English gooseberries and raspberries were unable to stand the excessive damp, and vegetables did very well but do not find a market. The potato crop promises to be a bumper one. A new nursery of about half an acre in area was started for grafting operations, but the soil proved unsuitable ; another locality will be selected for the purpose where better results are expected.

Chin Hills.—The fruit orchard at Falam has done better than last year. Plum trees fruited freely. Grafting was successfully attempted from cultivated peach on to the wild. It has been found that trees from Taunggyi do much better than those obtained from Saharanpur, and a number of young trees of the plum, cherry, pear, apple and greengage were consequently procured from the former place and are all doing well. The walnut and also eating and horse chestnuts in Falam and at Haka are also thriving. At Tiddim indigenous trees only have been planted so far and are said to be in good condition ; 150 lbs. of peaches were got, but the fruit was of very poor quality. The output of potatoes is increasing rapidly and a considerable quantity is said to be sold in the plains. At Tiddim seed potatoes received from Taunggyi have been recently planted and good results are expected. Strawberries and onions did very well, but receipts from the latter decreased owing to local competition. The vegetable gardens did well at all three centres of Falam, Tiddim and Haka. Two experiments with wheat were tried, one on land lightly manured with stable refuse and the other on very poor soil on the side of a hill ; the outturns worked out respectively to 1,184lbs. and 348lbs. per acre ; in the former case the crop was very fair and of good quality, in the latter it was very poor. Oatsand barley did fairly well and it is proposed to continue these experiments on a larger scale next year. Messrs. Street and Bateman are commended for the interest taken by them in the Falam and Tiddim gardens, of which they were in respective charge.

Katha.—An extension of about an acre was cleared and fenced. A few new trees were added to the orchard during the year and are doing well. The peach crop proved a failure owing to a severe gale in May, which blew off most of the unripe fruit and destroyed some of the trees. The West India papayas continued to do well. The vegetables again did well. Potatoes were not a success. Strawberries did well and find a ready market. Manilla hemp has grown fairly well, but experiments in the extraction of the fibre have not yet been made.

Myitkyina (*Myitkyina garden*).—Peaches have done particularly well. The nectarines, apricot, pear and cherry trees have not yet borne fruit. A few fruit formed on the apple and pear trees but did not ripen. The Himalayan walnut trees are making slow progress, but the Chinese variety has done well. Loquat, oranges, lemons, limes and peaches are thriving. Good strawberries were obtained. The vegetables grown from Sutton's seeds did better than those from seeds obtained from India. The Mocha coffee planted in the year is growing well. (*Sima garden*).—The peach trees only bore fruit in the year, the other fruit trees,—cherries, apricots, plums, nectarines, being still too small to bear fruit. Strawberries did fairly well. The vegetables from Sutton's seeds did well. Potato seeds were obtained from Taunggyi and are said to be doing well.

Taunggyi.—The sale of young fruit trees was small as compared with last year which was abnormal. Receipts are still below the average owing chiefly to the potato crop having failed to bring in any returns. Three varieties of American sweet potatoes were successfully experimented with at Taunggyi and Thamakan, the return being good and the tubers when cooked much superior to the country product. The experiments will be continued on a more extended scale, when it is hoped to distribute tubers amongst the Chins. The seedlings of the Arabian coffee seed are said to be healthy young plants. At Samka the experiments with coffee have been very successful. Experiments with barley, oats and linseed tried by Mr. Bertram, a local farmer, in the Yaunghwè state produced satisfactory results and the specimens exhibited by him were awarded special prizes at the cattle show and Arts and Crafts exhibition held at Taunggyi. The head gardener took 4,750 viss of potatoes to Thazi railway station, but on failing to sell them there went with them to Rangoon, where 1,950 viss were sold. The balance suffered in the journey and was unfit for sale. Potato growing will have to be abandoned in the orchard except for local requirements, as this crop cannot be sent to the railway at a profit now that it is so largely established among local farmers. The cherimoyers fruited profusely last autumn and fruit is now setting for another good crop. Some of the apricots gave a small crop for the first time this year. Peaches and apples fruited fairly well, and some sent to Rangoon were thought highly of. Plums also gave a small crop, but the pears and cherries flowered without fruit. Mr. Gordon superintended the experimental cultivation work during the year.

Sericulture.

22. A supply of 100 ounces of silk-worm eggs was obtained from France, at a cost of Rs. 343, and distributed to the five chief centres of the silk-worm industry, namely, Prome, Toungoo, Magwe, Pakôkku and Thayetmyo, and also a small quantity to the Superintendent, Agri-Horticultural Gardens, Rangoon. The reports from the districts and stations in which the experiment was tried are uniformly discouraging. Generally the eggs did not hatch. In Prome a few hatched, but the silk-worms died in a few days. In Pauk subdivision, Pakôkku district, the eggs hatched in Mi-e and Anyapampalun villages, but the worms did not take the mulberry leaves and died the next day; in Gangaw subdivision the eggs also hatched in Gangaw, Shansi and Zabaw villages, but the young worms died after a day without eating the mulberry leaves cut for them. In Toungoo the eggs were distributed to silk-worm breeders in the Swa and Saing valleys, Yedashè township, and the Subdivisional Officer states that some of the eggs hatched, but only one by one and the worms did not receive sufficient attention and died in consequence. The cause of the failure is no doubt chiefly the unfavourable climatic conditions and also in part ignorance on the part of the local silk-worm breeders. Under the circumstances it is not proposed to procure more seed at present nor to continue the experiment without the assistance of a trained expert in case it is later on considered worth while making another attempt in the Shan States, which possess a more temperate climate, approaching in some degree that of Kashmir, where the foreign silk-worm has succeeded so well.

Experimental cultivation.

23. *Tobacco (Nicotiana tabacum).*—A supply of 40 lbs. of Havana and 30 lbs. of Virginia tobacco seed was procured, as usual, from America and sent to 24 districts for experimental cultivation. In 13 districts the experiments were complete failures owing to heavy rains or destruction by insects, while partial success is reported from Prome, Tavoy, Thayetmyo, Bhamo, Myitkyina and Kyauksè. Good results were obtained in Hanthawaddy, Ma-ubin, Henzada, Minbu and Mandalay. The outturns were generally heavy, varying from 120 to 400 lbs. per acre, and the prices realized averaged from Rs. 40 to Rs. 50 per 100 viss and were considerably better than what was obtainable for the country variety. The Havana in particular is much esteemed by the people and preferred to the local variety, and Ma-ubin has become an important centre for its cultivation. There is a large export of the leaf, while very little Indian tobacco is now imported into the place. Seeds obtained from previous experiments are extensively utilized by cultivators and the industry at the centre named may be said to be flourishing. Locally rolled cigars from the

Havana leaf find ready sale in and out of the district, and the export trade is steadily increasing. It has been suggested to hereafter offer money prizes for the best grown and cured tobacco of the imported varieties in the Ma-ubin district.

Amongst the other agricultural experiments of the year the following were the most important :—

Ground-nut seed from Myingyan was tried in Yamèthin and Pakôkku. It succeeded well in Pauk subdivision, the outturn after drying being close upon 800 lbs. per acre.

English vegetable seeds were as usual distributed extensively in Upper Burma and generally did well. Where they failed heavy rain or insect pests were generally the cause.

Tea (*Camellia theiferea*) succeeded in the Southern Shan States, but failed in Bhamo and Myitkyina. Further experiments will be made in hilly districts where interest is shown in the cultivation.

Coffee (coffea) experiments with Arabian coffee are proving successful at Taunggyi, Myitkyina and Thatôn. Liberian coffee has done well at Bhamo, but reports from other centres have not been received. Experiments are being continued.

Cotton (Gossypium sp.).—No further experiments were made during the year, but some are being started. A large quantity of the seed of *Manila hemp (Musa textilis)* has also been distributed. The experiments in Minbu with *arhar dall* were not successful. Burmans do not appreciate it and there is no market. *Jowar (Sorghum vulgare)* raised from Sagaing seed also failed in Minbu and the crop is not much favoured by Burmans who prefer the local millet *Nwa-sa-pyaung*.

American sweet potatoes did well in the Southern Shan States but failed in the Chin Hills and Bhamo. The *Avacada Pears* planted last year are doing well. Experiments in Minbu with *tadaungbo* paddy got from Bassein were most successful. The results of experiments with wheat and China guava are not yet known. Experiments with gorse and broom seeds have not been particularly successful. At Maymyo where they came up the majority of the plants were killed by insects. Oats (*Avena sativa*) did fairly in the Lower Chindwin, Pakôkku, Myitkyina, and Meiktila, but failed in Magwe, Yamèthin and Myingyan owing to lack of rain. A small experiment at Maymyo with *Haricot Beans* supplied by Messrs. Bulloch Brothers was successful.

Miscellaneous.

24. The notes on Rainfall Registration and Inland Trade Registration as also the Season and Crop Report have been separately issued. The drafts of the revised Burma Famine Code and the Famine Manual in connection therewith have been prepared, and are now under the consideration of the Government. The former was written by Mr. T. C. Wilson, I.C.S., Settlement Commissioner, and the latter by Mr. H. F. P. Hall, Deputy Commissioner, who was placed on special duty for the work. The rice and cotton forecasts were published as usual; that for rice relating to the 15 principal rice-producing districts in Lower Burma, and that for cotton now includes all cotton-growing districts, 16 in number, in the Province.

Services of Officers.

25. The Assistant Director, Mr. Clancey, has again devoted himself unsparingly to the interests of the department. His valuable services have been recognized by the award of the Kaisar-i-Hind Medal. All the Superintendents and Probationers, except two of the more newly joined hands, have been well reported on, and as a class have done good and hard work. Of the senior officers Messrs. C. P. Torrens, J. Haddock and D. Hardinge may be specially mentioned for the excellence of their work and next to them Messrs. W. E. Johnson, W. J. Baker and H. B. Powell. Among the junior officers the following are singled out for the efficient performance of their duties, namely, Messrs. D. O'Hara, W. F. Ripley, E. M. Körper, C. S. Mc Kertick, F. A. DeSouza and Mr. F. G. Paul.

RANGOON :
The 16th August 1904.

J. MACKENNA,
Director of Land Records and Agriculture.

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APPEN

STATEMENT NO. I.—*Area under and cost of Supplementary*

District.	Total area.				Total assessment (including Cess in Lower Burma) on the area in column 5.	Number of Inspectors.
	Total in	Under occupation in	Under cultivation in	Under assessment in		
1	2	3	4	5	6	7
	Sq. miles.	Acres.	Acres.	Acres.	Rs.	
Akyab	1,931	619,734	535,691	605,272	1,425,407	5
Kyaukpyu	687	107,752	102,989	105,418	187,586	3
Sandoway	268	49,538	46,695	48,739	91,765	2
Hanthawaddy	2,630	1,166,974	1,117,544	1,162,898	3,735,783	8
Pegu	2,347	806,977	735,139	765,934	2,047,819	6
Tharrawaddy	1,159	451,258	432,875	446,807	1,175,924	4
Prome	1,724	342,188	313,403	339,938	517,442	4
Ma-ubin	1,648	419,812	402,053	417,113	847,927	4
Pyapôn	1,170	539,116	521,322	534,591	1,318,479	5
Bassein	2,223	609,366	538,731	606,543	1,497,543	8
Henzada	1,809	519,297	493,509	512,785	1,347,482	6
Myaungmya	1,812	572,456	511,323	568,724	1,278,467	5
Toungoo	1,497	308,357	280,476	279,391	662,509	4
Thatôn	2,265	617,080	603,492	606,205	1,250,042	6
Amherst	1,298	346,737	328,912	337,991	719,777	5
Tavoy	434	107,328	98,825	105,811	216,768	3
Mergui	577	81,894	73,939	80,844	160,750	3
Thayetmyo	577	96,246	75,492	95,495	129,934	2
Minbu	1,418	395,800	267,085	215,177	405,177	5
Magwe	2,915	903,539	451,947	‡...	‡...	8
Mandalay	700	225,797	157,369	148,395	560,845	5
Katha	824	153,727	115,969	115,035	139,697	5
*Shwebo**	*3,619*	*1,470,271*	...	...	...	*9*
Sagaing	1,862†	710,394	493,846	467,040	488,139	8
Lower Chindwin	1,242	409,736	256,918	230,943	146,425	2
*Upper Chindwin**	*97*	*30,082*	...	‡ ...	‡...	*1*
Kyauksè	564	240,822	176,855	185,992	704,891	6
Meiktila	1,571	585,419	331,545	268,873	360,001	5
Yamèthin	1,776	404,544	238,584	238,584	341,113	5
Myingyan	3,001	1,128,559	623,776	548,786	445,925	8
Total for 1903-04 ...	41,919	12,920,447	10,326,304	10,039,324	22,203,617	140
Total for 1902-03 ...	37,634	11,288,179	9,309,136	8,759,921	20,427,225	127

* Under
† Revised
‡ Settlement rates

DIX I.

Survey for the year 1903-04 (paragraph 7).

Number of Surveyors.	Total cost.							Remarks.
	Per square mile (column 2).			Per acre of the area in column 3.	Per cent. of the assessment in column 6.	Of Superintendence and inspection.	Of the Survey staff.	
	Of Superintendence and inspection.	Of survey staff.	Of combined total.					
8	9	10	11	12	13	14	15	16
	Rs.	Rs.	Rs.	Annas.	Rs.	Rs.	Rs.	
72	5·16	18·35	23·51	1·166	3·17	9,921	35,250	
31	14·68	9·85	24·53	2·502	8·98	10,083	6,767	
10	28·38	16·04	44·42	3·845	12·97	7,607	4,300	
104	8·61	22·05	30·66	1·105	2·16	22,632	57,989	
63	5·96	14·26	20·22	0·941	2·31	13,988	33,466	
45	8·17	21·08	29·25	1·202	2·88	9,472	24,436	
46	7·44	13·73	21·17	1·706	7·05	12,824	23,668	
42	9·90	12·65	22·55	1·416	4·38	16,319	20,848	
51	8·39	23·18	31·57	1·096	2·80	9,821	27,118	
67	8·61	15·81	24·42	1·425	3·62	19,135	35,143	
58	7·56	16·27	23·83	1·328	3·20	13,682	29,440	
50	7·54	13·89	21·43	1·085	3·04	13,660	25,177	
38	8·08	11·86	19·94	1·549	4·50	12,094	17,750	
71	9·22	15·48	24·70	1·451	4·48	20,874	35,071	
40	8·75	12·85	21·60	1·294	3·89	11,356	16,680	
22	18·71	20·48	39·19	2·536	7·85	8,122	8,889	
16	15·33	11·85	27·18	3·063	9·75	8,843	6,835	
19	11·86	16·33	28·19	2·703	12·51	6,841	9,420	
45	8·96	12·24	21·20	1·216	7·42	12,705	17,366	
74	6·42	9·28	15·70	0·811	‡ ...	18,708	27,067	
44	20·33	27·67	48·00	2·381	5·99	14,234	19,371	
34	13·61	17·94	31·55	2·705	18·61	11,213	14,784	
100	*5·71*	*7·95*	*13·66*	*0·538*	...	*20,651*	*28,787*	
80	9·39	18·07	27·46	1·152	10·47	17,492	33,658	
28	6·68	8·13	14·81	0·718	12·56	8,292	10,099	
6	...	...	...	...	‡ ...	...	...	
45	22·12	34·05	56·17	2·105	4·49	12,478	19,206	
50	10·19	11·61	21·80	0·936	9·51	16,012	18,240	
52	6·51	10·22	16·73	1·175	8·71	11,569	18,153	
70	7·02	8·45	15·47	0·658	10·40	21,058	25,348	
1,367	8·85	14·83	23·68	1·229	4·26	371,035	621,539	
1,240	9·13	15·11	24·24	1·290	4·27	343,643	566,720	

Settlement figures.
not yet introduced.

STATEMENT NO. II.—*Supplementary Survey Inspections for*

District.	Total number of *kwins* in Tract.	NUMBER OF *KWINS* IN WHICH				
		By Land Records Staff.				
		Superintendent.	*Inspectors.*			
			Number of Inspectors.	Number of *kwins* checked.	Average.	Total.
1	2	3	4	5	6	7
Akyab	1,103	89	5	580	116	642
Kyaukpyu	551	55	3	266	88	321
Sandoway	281	56	2	136	68	192
Hanthawaddy	2,795	59	8	884	111	943
Pegu	1,203	60	6	475	79	492
Tharrawaddy	544	83	4	413	103	496
Prome	1,013	88	4	655	164	673
Ma-ubin	512	23	4	216	54	...
Pyapôn	628	1	5	274	55	275
Bassein	1,268	87	8	688	86	701
Henzada	849	97	6	547	91	551
Myaungmya	1,053	66	5	410	82	431
Toungoo	762	76	4	362	91	402
Thatôn	1,385	95	6	534	89	629
Amherst	846	38	5	321	64	331
Tavoy	424	30	3	200	67	218
Mergui	631	31	3	126	42	157
Thayetmyo	377	38	2	220	110	222
Minbu	839	67	5	448	89	215
Magwe	2,264	91	8	1,158	144	1,158
Mandalay	661	94	5	469	94	340
Katha	1,269	73	5	568	114	641
Shwebo*	892	230	9	507	56	659
Sagaing	1,210	90	8	912	114	949
Lower Chindwin	761	82	2	236	118	275
Kyauksè	612	101	6	498	83	599
Meiktila	1,910	96	5	709	142	793
Yamèthin	1,884	61	5	335	67	387
Myingyan	2,795	118	8	1,074	134	1,005
Total for 1903-04	31,322	2,175	149	14,221	95	14,697
Total for 1902-03	30,186	2,131	139	14,406	104	15,257

* Under

the year 1903-04 (paragraph 15).

THE FIELD-WORK WAS TESTED

Difference in revenue due to corrections.		By District Officers.								
			Subdivisional Officers.			*Township Officers.*				
Total increase.	Total decrease.	Deputy Commissioner.	Number of Subdivisional Officers.	Number of *Kwins* checked.	Average.	Number of Township Officers.	Number of *Kwins* checked.	Average.	Total.	Remarks.
8	9	10	11	12	13	14	15	16	17	18
Rs.	Rs.									
837	135	...	3	38	12	8	89	11	127	
114	25	1	...	...	...	5	31	6	32	
30	9	3	...	...	...	3	16	5	19	
587	228	11	3	40	13	7	51	7	102	
1,688	130	11	2	25	12	5	35	7	69	
120	7	5	2	22	11	6	34	6	56	
381	76	...	3	24	8	7	50	7	70	
456	14	5	2	8	4	4	13	3	...	
898	10	6	2	9	4	4	36	9	45	
1,616	223	3	2	...	..	6	28	5	31	
2,079	410	5	2	43	21	6	90	15	138	
927	242	...	2	20	10	4	10	2	30	
900	252	1	2	10	5	6	31	5	42	
263	70	11	3	9	3	6	6	1	26	
263	14	5	3	53	18	7	105	15	163	
82	4	2	...	...	...	4	39	10	39	
150	25	4	2	6	3	4	25	6	35	
112	70	3	2	11	5	4	41	10	55	
756	391	3	2	18	9	5	50	10	71	
7	26	...	2	...	...	6	...	...	...	
1,291	783	...	2	4	2	4	24	6	28	
152	265	2	3	8	3	7	24	3	32	
...	...	...	...	...	...	...	...	...	...	
692	1,039	6	3	125	42	6	191	32	316	
111	67	...	2	2	1	...	...	...	...	
1,368	322	13	2	38	19	3	16	5	67	
451	836	2	2	14	7	4	21	5	35	
74	91	14	2	12	6	5	34	7	58	
839	458	5	2	39	19	6	88	15	132	
17,244	6,222	121	57	578	10	142	1,178	8	1,818	
...	...	145	52	417	8	139	973	7	1,441	

STATEMENT NO. III.—*Statistics relating to Government Survey*

Station in which school is established.	Average number of pupils on the roll in each month.	Number of days the school was in session.	Average number of days each pupil received tuition.	Number of pupils on the rolls on the 31st March.		
				Pupils paying fees.	Free pupils.	Total.
1	2	3	4	5	6	7
Akyab	26	261	261	30	...	30
Kyaukpyu	22	273	222	15	5	20
Insein	28	277	254	35	...	35
Pegu	21	275	225	19	1	20
Prome	24	282	255	13	11	24
Ma-ubin	18	274	253	16	...	16
Bassein	19	253	231	19	1	20
Henzada	23	276	256	22	1	23
Toungoo	30	265	239	22	4	26
Moulmein	24	253	245	28	...	28
Pakôkku	31	261	260	4	24	28
Minbu	35	254	222	12	20	32
Mandalay	23	277	246	16	8	24
Katha	23	267	234	17	3	20
Sagaing	37	256	225	35	...	35
Mônywa	20	250	214	1	19	20
Meiktila	32	277	256	5	24	29
Yamèthin	28	277	245	6	19	25
Total for 1903-04 ...	464	267	241	315	140	455
Total for 1902-03 ...	512	261	233	361	148	509

STATEMENT NO. IV.—*Receipts and Expenditure of*

No.	Station.	Budget allotment.	Receipts from sale of products.	Establishment.
1	2	3	4	5
		Rs.	Rs. A. P.	Rs. A. P.
1	Bhamo (Sinlumkaba)	2,374	51 2 10	1,301 9 9
2	Chin Hills (Falam)	1,250	417 7 0	742 0 0
3	Katha (Katha)	2,000	273 10 9	1,200 0 0
4	Myitkyina (Myitkyina and Sima)	1,970	213 1 9	.....
5	Southern Shan States (Taunggyi)	4,316	913 9 6	1,746 0 0
6	Distribution of seeds, etc., from Headquarters	4,500	.....	.....
7	Distribution of Agricultural Implements from Headquarters ...	2,000	.....	.....
8	Sericulture (French silk-worm eggs)	...	.....	.....
	Total ...	18,410	1,868 15 10	4,989 9 9

(*a*) Includes Sima
(*b*) Funds met from grant

G., B. C. P. O.—No. 74, D. of L. R. & A., 30-9-1904—304.

Schools for the year 1903-04 (paragraph 17).

Total income.	Expenditure.					Number of pupils who passed the last examination in			Remarks.
	On Establishment.	On Scholarships.	On prizes.	On other contingencies.	Total.	Surveying.	Arithmetic.	Revenue law.	
8	9	10	11	12	13	14	15	16	17
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.				
386	1,104	473	28	494	2,099	14	17	5	
201	864	785	18	97	1,764	10	8	...	
682	1,152	600	32	465	2,249	16	15	22	
488	1,204	856	18	48	2,126	10	8	1	
238	1,104	886	26	583	2,599	15	14	14	
548	1,104	919	14	154	2,191	12	11	8	
477	1,128	1,012	18	545	2,703	19	14	13	
530	1,104	467	24	66	1,661	19	15	10	
662	1,140	449	32	252	1,873	13	12	6	
645	1,104	1,530	30	549	3,213	15	22	20	
60	1,104	1,064	30	244	2,442	23	17	...	
230	1,104	1,346	34	237	2,721	14	11	1	
177	1,104	708	26	118	1,956	12	6	...	
260	961	472	24	201	1,658	9	6	...	
559	1,103	879	36	320	2,338	20	22	4	
45	1,127	572	24	170	1,893	7	7	...	
99	972	1,437	34	208	2,651	14	8	...	
90	1,104	458	32	165	1,759	14	10	...	
6,377	19,587	14,913	480	4,916	39,896	256	223	104	
6,920	19,801	13,703	610	4,742	38,856	301	92	176	

xperimental cultivation during 1903-04. (paragraph 21).

Expenditure.						Remarks.
Purchase of seeds.	Up-keep of garden.	Feed and keep of stock.	Miscellaneous contingencies.	Purchase of agricultural implements.	Total.	
6	7	8	9	10	11	12
Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.		Rs. A. P.	
67 3 0	112 8 0	41 12 0	3 6 0	...	1,526 6 9	
117 10 0	98 4 0	...	268 11 6	...	1,226 9 6	
116 7 0	207 12 0	...	83 6 8	...	1,607 9 8	Rupees 20 refunded.
...	...	...	...	...	(*a*) 1,574 6 10	
80 0 0	37 14 0	31 0 0	595 6 2	...	2,499 4 2	
1,302 2 4	...	...	65 4 6	...	1,367 6 10	
...	...	...	...	...	...	
...	...	...	...	...	(*b*) 343 5 0	
1,683 6 4	456 6 0	72 12 0	1,016 2 10	...	10,136 0 9	

arden.
or purchase of seeds.

LAND RECORDS ADMINISTRATION REPORT

FOR

THE YEAR ENDING 30TH JUNE 1905.

RANGOON:

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LAND RECORDS ADMINISTRATION REPORT

FOR THE YEAR ENDING 30TH JUNE 1905.

Prefatory.

With effect from the 1st January 1905, the Land Records Department was re-amalgamated with the Settlement Department, both of which are now controlled by the Settlement Commissioner and Director of Land Records and Agriculture, assisted by a Deputy Director and an Assistant Director. Mr. J. MacKenna, M.A., I.C.S., held charge of the Department till the 31st December 1904, when it was, under the new arrangement, taken over by Mr. T. C. Wilson, I.C.S., the former then becoming Deputy Director. Mr. J. C. Clancey, F.R.A.S., occupied the post of Assistant Director throughout the year.

During the year long leave was granted to four Superintendents and short leave to one, while four others returned to duty from long leave and one from short leave. Owing to the undermanned state of the Department every Probationer has held independent charge of a Land Records office for longer or shorter periods and transfers and re-transfers from district to district have been numerous. Three new appointments as Probationers are to be made shortly, when the present strain should be somewhat relaxed. One Probationer resigned during the year. Six officers received grade promotion in the year. There were no fresh appointments to the Department. Maung Pe Maung, Superintendent of Land Records, was placed in charge of the Katha Special Survey Party in the place of Mr. Purchase, who reverted to duty in the regular line.

SECTION I.

LAND RECORDS.

Demarcation preliminary to survey.

The demarcation work which has been in progress for some time in the Pakôkku district was brought to an end in the middle of December, and the entire area intended for survey has been completely demarcated. The area demarcated during the year was 365 square miles, situated in the Pauk township, and the work was done by two Demarcation Officers, who were subsequently transferred to Thayetmyo to continue similar operations there. The cost of the work amounted to Rs. 1,768. In Rangoon Town the extended area of the Municipality comprising nine square miles was demarcated by two Demarcation Officers and disputes were dealt with by a specially appointed Boundary Officer. The work was begun in August and completed early in November, the maps being in in time for the regular survey. Wooden pegs were used for the preliminary demarcation and permanent boundary marks put down after survey and settlement of boundary disputes. The cost of the operations was Rs. 14,192. The demarcation both in Pakôkku and Rangoon Town was reported by the officer in charge of No. 7 Party of the Survey of India Department to be of good quality.

From the middle of December to the end of June a staff of two Demarcation Officers finished the demarcation of 911 square miles in the Thayetmyo district. The work is in advance of the survey to be undertaken later by No. 7 Party. The Sinbaungwè township has been completely demarcated and part of Minhla township. The work was brought to a close owing to the illness of the Demarcation Officers, but will be continued next November. The balance for demarcation is about 800 square miles. The cost of the year's work came to Rs. 2,659.

In Katha district an area of 12 square miles which remained over from last year was completed. The work lay on the west side of Katha township and was done by the Land Records Inspectors. The demarcation was undertaken in connection with the requirements of a local agency survey party which was operating in the district.

An area of 12 square miles was demarcated by the ordinary Land Records staff in the Palaw and Mergui townships of the Mergui district for survey by a special staff which was engaged in revision surveys preliminary to settlement.

With the inception of a special survey for the issue of leases in the Aungbinlè lake area in the Mandalay district an area of five square miles was demarcated on the basis of *thugyis'* charges. The work was carried out by the Land Records staff.

Demarcation preparatory to a large scale survey of the Pegu Municipal town with an area of five square miles was completed by a single Demarcation Officer and at a cost of Rs. 1,026.

Survey by No. 7 Party, Survey of India Department.

2. The Party continued its operations in the Pakôkku district, where 660 square miles in the Seikpyu and Pauk townships were traversed and 605 square miles in the Myaing and Pakôkku townships cadastrally surveyed; in addition 25 square miles of topography and 31 square miles of river blocks on the 16″ scale were executed. The added area of Rangoon town consisting of nine square miles was also surveyed on the scale of 100 feet to the inch. The actual cost for the field-season with the probable cost during the recess amounts for the work done in the Pakôkku district to Rs. 123,454 and for that of Rangoon Town to Rs. 69,484. The area traversed in advance in the Pakôkku district is 1,122 square miles and that remaining to be traversed 717 square miles, which leaves a total area for cadastral survey of 1,839 square miles.

Revision surveys.

3. During the year a total area of 95 square miles containing 31,987 acres of cultivation was re-surveyed in the Prome district by a special staff of one Inspector, one sub-surveyor and eight field-surveyors. These revisions were necessitated by the continuous and heavy increases in the occupied area and extensive changes of field boundaries, and in order that assessments might be correctly made it was necessary that the survey, which was beyond the power of the local staff, should be brought up to date. The field work was checked by the Superintendent of Land Records and also by the Assistant Director and found on the whole to have been carefully executed. The recess work was inspected by the Deputy Director and found in order. The holding-marking of the *kwins* re-surveyed was done by the local surveyors. The cost of the operations amounted to Rs. 8,402.

The Ma-ubin-Pyapôn revision survey which was commented upon in paragraph 3 of last year's report was continued in the year, but on an extended scale. The season's operations included the Pantanaw township, in which revisions of survey were reported to be necessary, for the requirements of the revision settlement party, the completion of the portion of the work in Yandoon township remaining over from the previous year's programme, and the addition of further areas which were reported to need re-survey preliminary to re-settlement. The Assistant Director visited Ma-ubin specially to arrange, in consultation with the local officers, a complete programme of work. Owing to the magnitude of the work it was decided to post a junior Land Records Officer to assist the local Superintendent of Land Records in the supervision of the revision survey party. It was not, however, possible to spare an officer till January. It was arranged that field-work should begin on the 1st December, but owing to plague regulations the party was detained and could not therefore begin work till the 14th December. The party first worked in the Yandoon township to suit the requirements of the revision settlement party and then proceeded to the Pantanaw and Ma-ubin townships of the Ma-ubin district and Kyaiklat township of the Pyapôn district. The field establishment consisted of eight Inspectors, six sub-surveyors, 65 field-surveyors and seven draughtsmen and computors. In addition a small staff of twelve draughtsmen and computors was entertained for a limited time to prepare *kwin*-traces for the revision settlement party which was working concurrently with the survey party in the Pantanaw and Yandoon townships. The total area cadastrally re-surveyed was 692 square miles containing 273,939 acres of cultivation. The average size of the field was found to be 0·58 acre. In breaking up large *kwins* into smaller and more valuable ones 14 sub-traverses were run,

besides 174 other such lines for the re-placement of old stations, a large number of which were found missing from erosions and other causes, while a considerable number were found out of position due to faulty annual replacements. Traces of the *kwin* maps of the Yandoon and Pantanaw townships were handed over in batches to the Revision Settlement Officer. Unfortunately settlement followed so closely on the survey that traces had to be very rapidly prepared and numbered traces could not be supplied. A certain amount of inconvenience was thus caused the Settlement Officer, but his work was not to any extent delayed. The Superintendent, the special Assistant, and the Inspectors ran numerous check lines and practically all the sheets containing cultivation were *partalled*. The quality of the survey work thus disclosed is reported as very satisfactory. The Deputy and Assistant Directors also checked the field-work and found the same to be of good quality. The former besides, under the orders of the Local Government, made an extended tour through the tracts for resurvey in order to gauge the extent of revisions necessary and has submitted his report in the matter which is under consideration. Unfortunately the year's programme could not be completed. This was due to the fact that the local staff could not render any help in the revisions in the Yandoon and Pantanaw townships in the early part of the season. The settlement party was working in these townships and the work had to be hurried on. In the Pantanaw township the areas for re-survey were greater than was originally estimated. In much of the tract, also, the country was difficult to survey owing to heavy jungle-cutting through *kaing* grass and the assistance rendered by village headmen and cultivators was insufficient. And, lastly, the rains at the close of the field-season impeded work for the latter half of May. For these reasons 33 *kwins* in the Ma-ubin township and 79 *kwins* in the Kyaiklat township have been left over for survey next season when they will be first taken up.

The party will then take up the Dedayè, Pyapôn and Bogalè townships of the Pyapôn district and part of the Moulmeingyun township of the Myaungmya district. The recess-work of the previous year's surveys was inspected by the Assistant Director and that of the current year by the Deputy Director, and on both occasions the mapping and connected calculations were found to be of a professional standard. The total cost of the year's operations, namely, actual of the field-season and estimated for the recess, amounts to Rs. 71,397.

Reference to the revision surveys to be undertaken this year in the Toungoo district was made in paragraph 10 of last year's report. Owing to the numerous changes and rapid extensions of cultivation since the completion of the original survey it was found to be beyond the powers of the regular staff to bring the survey up to date. A special staff of two Inspectors, twelve field-surveyors and one draughtsman was employed in the field season in connection with these revisions of survey. Work started in December and was finished in April; the recess-work is now in hand. An area of 68 square miles, of which 38,604 acres were under cultivation, was mapped. The average size of the field was 0·47 acre. The survey sheets were thoroughly *partalled* by the Superintendent and the Inspectors, and the Assistant Director examined the field-work and found it to be of good quality. The recess-work was inspected by the Deputy Director and was well done. The cost of the work, actual and estimated, is Rs. 8,979.

Sanction was accorded to the entertainment of a small special staff for revision survey preliminary to settlement in the Mergui district. In view of the early approach of settlement it was considered important to have all the maps quite up to date for its special wants. The Assistant Director visited Mergui in November and arranged a programme of work. It was decided to survey also any extensive blocks of new land in the neighbourhood of existing cultivation so that they too might be brought under settlement. Field-work was started in December with a party consisting of one Inspector, one sub-surveyor, six field-surveyors and three draughtsmen and computors. Progress was slow at the commencement owing to a difficulty in obtaining chainmen and also to the scattered nature of the work and its remote situation. Altogether an area of 54 square miles was cadastrally surveyed, of which ten square miles were of entirely new

kwins. These had also to be traversed. The acreage under cultivation comprised 13,151 acres. The sheets were adequately checked by the Superintendent and the Inspector. Field-work was also examined by the Assistant Director and was of fairly good quality. The total cost of both the revision and original surveys amounts to Rs. 8,990.

A small special staff of five surveyors and draughtsmen was engaged in the year in the Minbu district to re-draw for reprint certain maps of *kwins* in which changes have been numerous and of which the maps, owing to numerous corrections, were somewhat confused. Most of the maps have been re-drawn for publication and the area statements prepared, and the remainder of the work should be completed shortly. The cost, actual and estimated, amounts to Rs. 2,024.

As mentioned in paragraph 3 of the report for last year, the revision survey operations which were inaugurated in connection with the revision of settlement in the Mandalay district had not been completed and the balance of the work was taken in hand and finished this year. The staff which was employed altogether for eight months was composed of one Inspector and ten surveyors, draughtsmen and computors. Work was begun in December and an area of 49 square miles cadastrally surveyed with a contained area of 11,735 acres of cultivation. The Superintendent carefully tested the accuracy of the survey and kept a strict watch over the operations. The Deputy Director inspected the office work and was quite satisfied with it, the map work being of excellent quality and very workmanlike. The holding-marking and preparation of *kwin* traces was undertaken by the special staff. The cost of the entire work comes to Rs. 3,831.

In the Mandalay district the Aungbinlé lake area, 6 square miles, which had been recently drained by the Public Works Department and rendered fit for cultivation by the construction of numerous distributaries and water-courses was also re-surveyed by a special staff of one inspector and six surveyors and draughtsmen employed for a space of three months in all. It was considered that if cultivation took place this year, as was desirable, the cost of the survey would be more than recouped by water-rate. The area was properly traversed and surveyed in detail, the land being laid out in $7\frac{1}{2}$-acre blocks for leases, duly demarcated and open ways as approaches to all blocks marked out in order that cultivators might have free access to their holdings. The field-work was thoroughly checked by the Superintendent and the Inspector. The office work was inspected by the Deputy Director and found to be in order. The entire cost of the work comes to Rs. 817, which will be more than covered by the survey fees at annas eight per acre to be paid by the lessees.

The survey of Maymyo town in the Mandalay district was organized by the Superintendent of Land Records, but the staff worked under the orders of the special officer appointed to settle boundaries. The final checking and passing of the survey was, however, carried out by the Superintendent of Land Records. The residential area was surveyed on the 64-inch scale and the agricultural and suburban area on the scale of 16 inches to the mile and the surveys were geographically connected. The survey staff consisted of one Inspector and four surveyors, the traverse work occupying about a month and the detail work about four months. The Superintendent of Land Records tested the maps and found the large-scale work of good quality, but the survey on the 16-inch scale was badly executed and had to be re-done. The mapping work in connection with the above survey will be done at Mandalay in the Land Records Office. The cost of the work amounts to Rs. 4,236.

In the Katha district the special survey party which was at work there in addition to their regular work, which is described elsewhere, revised the survey of 24 square miles containing 7,757 acres of cultivation.

Proposals for revision surveys were received for the Myaungmya district, and the Assistant Director visited the locality and, in consultation with the local officers, prepared a scheme which is still not finally disposed of. The reasons given for the re-surveys are those common to the Delta, namely, the rapid extensions of cultivation and frequent changes in interior details since the original survey as cultivation has become more permanent. The area proposed for survey by a

special staff consists of 15,616 acres of cultivation in the Wakéma township (including 4,637 acres in Kathamyin circle of Moulmeingyun township and 3,439 acres in the Kyaikpyi portion of Moulmeingyun township which is to be done by the Ma-ubin-Pyapôn revision survey party).

Mention was made in last year's report of proposals for extensive revision surveys in the Pegu district. As the data on which the proposals were framed were considered incomplete and unreliable the matter was postponed for fuller investigation. Accordingly exhaustive data were locally compiled and the Assistant Director, accompanied by the Superintendent of Land Records, made a close local examination of the ground with a view to determining the exact area requiring re-survey during the open-season. A detailed scheme was then drawn up in which the areas returned as "ripe for survey" were put at 166,762 acres in whole and 62,424 acres in part and as "not ripe for survey" 47,920 acres in whole and 10,103 acres in part. In addition it was suggested that cultivated blocks with a total area of 5,570 acres under occupation in the unsettled tracts should also be included in the survey programme. It is proposed that the survey should extend over two seasons at an annual estimated cost of Rs. 38,000 and that it should be undertaken by a special party. Unquestionably cultivation in the district has enormously expanded, and continues to expand, since the original surveys. Considerable areas have been annually given out in *pottas*, lands have been reclaimed by the erection of bunds and the draining of creeks, while numerous roads have been constructed in different parts, all of which have helped to greatly change the physical features of the country. The local staff, too, has been undermanned and incapable therefore of keeping up changes in the maps to a greater extent than has been done. Besides the new areas, which have had to be mapped from time to time, mostly piece-meal, much of the original area was new cultivation, of which the field boundaries did not become permanent till some years after the survey. It has now therefore become necessary to re-map a portion of the old areas with a proportion of the new in order that mathematically accurate maps may be available. The subject is yet under discussion: further information has been called for, and it is doubtful if orders can be obtained in time to begin the surveys next season though budget provision for the undertaking exists.

Proposals for a scheme of revision surveys, and the original survey of certain excluded areas in the Amherst and Thatôn districts, in anticipation of revision of settlement, are under consideration. The districts were visited during the season by the Deputy and Assistant Directors. If sanctioned, operations will commence next field-season.

Special surveyors were employed in the open-season to help the local surveyors in the annual survey of island *kwins* for assessment purposes in the districts of Mandalay, Sagaing and Myingyan. In Mandalay six surveyors were at work for six months; the area surveyed was 15,227 acres of island *kwins* and about 5,000 acres of other lands, chiefly extensions and changes in the Mandalay Canal tract. In Sagaing a staff of six surveyors working for four months completed the survey of 15,189 acres, of which 7,809 acres only were under cultivation at a cost of Rs. 831. In Myingyan ten surveyors, working the entire field-season, finished the survey of 22,550 acres, of which 15,237 acres were assessed; the cost amounted to Rs. 1,486.

Special surveys.

4. The special surveys in the Katha and Tavoy districts mentioned in paragraph 4 of last year's report were continued and brought to a successful close in the current year. The former were in charge of Mr. Purchase, Superintendent of Land Records, till September, when he was replaced by Maung Pe Maung, Superintendent of Land Records; the latter were under the local Superintendent of Land Records (Mr. Stubbs). The Settlement parties which were operating in the district during the season were furnished with numbered traces of the year's surveys with commendable promptitude, and for the surveys of the previous season either printed maps or numbered *kwin* traces were duly supplied, so that the Settlement officers were able to deal with the whole of the surveyed tracts. The Katha survey

party took the field for the advance work in November and for the detail work a month later. Rain in the early part of November impeded traversing at the start, but afterwards the work progressed satisfactorily. The staff consisted of three Inspectors, four sub-surveyors, twelve field-surveyors and three computors and draftsmen besides one Inspector and sixteen draughtsmen who were for a time specially employed at the suggestion of the then Settlement Commissioner for the area and map work required for the Settlement party. The surveys in the Kawlin and Wuntho townships were first taken in hand for the convenience of the settlement and afterwards those of Katha township and the balance remaining over in the Tigyaing township. The detail surveys were executed mostly on skeleton plots, but in portions of the Indaw and Tigyaing township, owing to the urgency of the work in the first case and to the cadastral section having overtaken the traverse in the other, some had to be done on the triangulation system. These *kwins* were. however, subsequently connected by traverse. A total area of 103 square miles was traversed in the year, while the area surveyed in detail consisted of 127 square miles, of which 13,753 acres are under cultivation, a portion of this survey having been traversed in the previous season's work. The average size of the field was 0·23 acre. Besides these original surveys the party undertook and completed 103 square miles of revisions which are referred to in paragraph 3. The field-work of the original survey was concluded in April, while the revision surveys occupied the whole of May. The field-work was examined by the Assistant Director and found to be of good quality. The recess work was inspected by the Deputy Director, who was satisfied with the methods of survey which were sound and the adequacy of the *partalling*. The entire cost, actual and estimated, of the operations amount to Rs. 18,610 for the cadastral section and Rs. 5,662 for the traverse section—in all Rs. 24,272. The cost of the extra establishment engaged for settlement requirements was Rs. 3,275. The survey was of a difficult nature, being scattered and for great part in hilly country, travelling was not easy and the country is notorious for its unhealthiness. The survey was carried out in a thoroughly workmanlike manner, and Maung Pe Maung is deserving of very great credit for the successful results of the operations.

A small party consisting of two sub-surveyors, three field-surveyors and three computors and draughtsmen were engaged for a short season to finish the survey of cultivated blocks in the tracts outside of supplementary survey in the Tavoy district which remained over from last season. The detail survey was based on advance traverses except in part which had to be done on the triangulation system owing to the nature of the country operated over, but all such work, together with similar work unconnected by traverse in the previous year, was properly enclosed by traverse in the year. The total area traversed was 20 square miles and the area cadastrally surveyed was 12 square miles, of which 6,697 acres were under cultivation. The operations were somewhat delayed owing to inadequate help from villagers and the disconnected nature of the survey. It was, however, satisfactorily concluded, but took a month longer to accomplish than was anticipated. The holding-marking was left to be done by the Settlement party. The work was examined on the ground by the Assistant Director, who found it to have been properly done. The Superintendent thoroughly *partalled* the surveys and spent much of his time on the work, for which he deserves credit. The total cost of the combined operations comes to Rs. 2,765, of which Rs. 1,472 is on account of the traverse portion and Rs. 1,293 for the detail section.

The survey of Tavoy town on a large scale which was referred to in the previous year's report was finished during the year. The work occupied three months in all and was done by two surveyors. The area surveyed was 401 acres and the cost of the work was Rs. 408, which was borne by the Municipality.

In the Pegu district a survey on the 64-inch scale of Pegu town was undertaken and completed. A staff of one Inspector and six field-surveyors was employed for four months and two sub-surveyors and two computors for two months; also an office staff of eleven hands for four months. The entire cost of the work, including Rs. 1,000 for demarcation of holdings, amounted to Rs. 6,728, which has been debited to the Municipality. Besides this survey two special surveyors

completed the survey of the land required for the Pegu-Moulmein Railway at a cost of Rs. 490, which was paid by the Railway Company. The Superintendent devoted considerable time and labour to the survey of Pegu town and thoroughly checked the accuracy of the work, which is reported to be of a high order.

The special survey of 12 square miles accomplished in the Mergui district by the revision survey party which was operating there is described in paragraph 3 *ante*.

In Akyab, in connection with a scheme for raising the rates on land in the unsettled tracts to bring them as much as possible without a settlement in line with the higher prevailing rates in the settled tracts, proposals were received for the cadastral survey of the areas in question. These were examined on the ground by the Assistant Director who, in consultation with the local officers, prepared a four years' programme. The subject has been duly represented and orders thereon are awaited.

During the visit in the field-season to the Kyaukpyu and Sandoway districts the Assistant Director, in consultation with the local officers, proposed the cadastral survey by special staff of certain cultivated blocks which had not been taken up by No. 7 Party of the Survey of India Department which surveyed some areas in these districts a few years ago. Definite proposals have since been received for the former district and orders on the scheme have been applied for. The proposals for the latter district have not been received as yet owing to a change in District Officers.

In the Tharrawaddy district proposals were submitted for the cadastral survey by special agency of certain areas in the unsettled tracts, but as they were incomplete consideration of them has been postponed till the ground has been carefully gone over by responsible officers and definite estimates regarding area, establishment and cost prepared.

Fishery surveys.

5. No special establishments were employed on the survey of fisheries in the year. The regular staff undertook and completed the survey and demarcation of 32 fishery tanks in the Amherst district, the total area of which amounted to 1,084 acres.

Potta surveys.

6. Special staffs for the survey of *pottas* were employed in 15 districts, partly on regular pay, but mostly on the piece-work system. In all 9,064 cases were dealt with and 69,052 acres surveyed at a total cost of Rs. 44,607. Sixteen Inspectors and 119 surveyors who worked for varying periods of the field-season were entertained. The fees realized from applicants, generally at the maximum rate of annas 8 per acre, amounted to Rs. 43,734. In Thayetmyo the rate ranged from annas 3 to annas 6 the acre. In all but two instances the cost of survey was covered by the fees; in Pyapôn the excess in cost over survey fees was in part due to the fact that fees for surveys done this year were collected and credited last year, and in Mergui because of the distances to be travelled in getting to most of the plots for survey. The demarcation and survey are reported as on the whole good. In Bassein and Toungoo some of the previous year's surveys were found defective and had to be re-done. Special Grant Officers were appointed to dispose of *potta* applications in the Pegu, Pyapôn and Amherst districts. In most districts the local officers also took part in the disposal of grant cases.

In Pegu, in consequence of the suspension of the issue of *pottas* for two years, the two grant Myoôks employed in the district confined themselves to the disposal of the 769 pending cases of the previous year which had already been surveyed, and no special surveys were undertaken in the year. In pending cases where the fees had already been paid but no survey was done the survey fee was returned to applicants. In the Pyapôn, Toungoo and Amherst districts *potta* applications were numerous and the areas surveyed considerable. In the two latter districts portions of the areas applied for have been left over for survey in the following year. In the Amherst district it is reported that 15,775 acres were thrown out owing to want of demarcation or because there were two or more applicants for the same plot. In the Pegu district the

special officers appear to have had orders to issue grants in disputed cases only and to reject all others. The work of one of the *potta* Myoôks in Amherst is said to have been unsatisfactory; the rest are well reported on. In Katha the issue of *potta* leases was stopped under the orders of Government and the people allowed to clear land with the permission of the thugyi; no *potta* establishments were engaged, such new cultivation as came into existence being mapped in the ordinary way by the regular staff. In Myingyan grants are generally discontinued. In Sagaing special establishments are scarcely needed, the areas are comparatively small and should be done by the local staff which is of considerable strength.

Area under and cost of supplementary survey, Statement I.

7. The total area under supplementary survey was 42,837 square miles, or an increase over last year of 918 square miles. Of this increase 809 square miles falls in the Salingyi and portions of Palè and Kani townships in the Lower Chindwin district which had been previously summarily settled and have now been brought under supplementary survey; 97 square miles of the Mingin subdivision of the Upper Chindwin district similarly settled have also been brought under supplementary survey for the first time. The variations for other centres are unimportant. In Hanthawaddy nine square miles were transferred to the Rangoon Town Lands, in Pyapôn five square miles were transferred to Myaungmya, in Meiktila 12 square miles were declared reserved forests, in Myingyan four square miles of island *kwins* were handed over to Pakôkku. Eleven square miles were lost to the Thatôn district by the further erosions of the Sittang. In Pegu there was an addition of 17 square miles of local surveys of Sittang accretions which, though under supplementary survey before, had been omitted from the returns, and in Myaungmya besides the five square miles transferred from Pyapôn there was an increase of ten square miles, the result of re-checking of the area in Kyaikpi township. In Katha there was an increase of 21 square miles, due to the inclusion of areas adjoining old *kwins* which had been surveyed by the local staff. The Shwebo district is still under settlement and its area has therefore not been included in the Provincial area shown as under supplementary survey, though a full Land Records staff is at work in the district in connection chiefly with settlement requirements. In Magwe the settlement rates have not yet been introduced, and the nature of the work done has therefore been the same as last year, *viz.*, crop-marking, bringing the maps up to date and the preparation of the State land assessment rolls. The areas of Rangoon and Mandalay towns are excluded from the total area, as though Land Records staffs are at work on them the nature of the duties performed are different from ordinary supplementary survey and registration. The total assessment of the year amounts to Rs. 23,977,857, which is an increase of Rs. 1,774,240 as compared with the previous year. The expansion in cultivation has been almost general, but the districts which have mainly contributed to the increase in revenue are Akyab, where the new revision settlement rates in the Ponagyun, Kyauktaw, Myohaung, Pauktaw and Minbya townships came into force; Ma-ubin, where cultivation has considerably expanded and grants have largely come under assessment; Pyapôn, where new settlement rates were introduced in six circles; Myaungmya, where enhancements due to settlement took place; Mandalay, where cultivation increased to a great extent in consequence of improved irrigation in the Mandalay Canal Tract and of a very good rainfall in the year which favoured cultivation in the Mogaung tract; and in the Lower and Upper Chindwin, where new tracts came under settlement. There were also considerable increases of revenue in Pegu, where large areas of *pottas* came under assessment, and in Katha; also in Meiktila, Myingyan and Minbu. On the other hand, there were large decreases in Thatôn and Amherst on account of remissions due to destruction of crops by floods. Smaller increases are recorded for other districts, the result of ordinary extensions of cultivation, the assessment of time-expired grants, and other causes.

The total cost for supervision amounts to Rs. 381,298 and for survey to Rs. 638,142—in all Rs. 1,019,440. This is in excess of last year's total by Rs. 26,866 only, due in great measure to an increase of establishments. The

cost per square mile in the year was Rs. 23·80 and per cent. of the assessment Rs. 4·25; the former rate is slightly higher and the latter slightly lower than the corresponding rates quoted last year. In Kyaukpyu, Sandoway and Tharrawaddy the cost was higher owing to the appointment of additional Inspectors, in Pegu owing to a more senior Superintendent being appointed to the district, also to the appointment of a probationer and another Inspector and 12 surveyors. In Pyapôn the appointment of a Superintendent on higher pay and the heavy initial cost of the formation of a separate Land Records Office account for the increase. In the Lower Chindwin the cost was considerably higher than before owing to the extension of supplementary survey operations over a large area during the year. In Magwe the cost rate was less owing to a reduction in the number of surveyors. The only districts in which the cost rates are very high are Sandoway, Tavoy, Mandalay and Kyauksè and this is attributable to the comparatively small areas under supplementary survey. There were marked decreases in the cost per cent. of the assessment in Ma-ubin, Myaungmya, Thayetmyo, Mandalay, Katha, Kyauksè and Myingyan, owing mainly to extensions of cultivation and to the favourable season.

Submission of assessment-rolls.

8. The standard of punctuality was not so good in Lower Burma this year as it was last. In eight districts the rolls of one or more circles were submitted after due date. Toungoo has the worst record, the rolls of no less than 15 circles being late. The survey of numerous extensions is said to have been the cause, but greater punctuality must be aimed at in future.

In Upper Burma, Magwe was again late in the submission of the *kaing* and *kaukkyi* rolls but punctual with *mayin*. In Mandalay only one *mayin* roll was punctually submitted. The *kaukti* rolls were generally punctually submitted. Twenty-two surveyors submitted the *kaukkyi* rolls punctually: the remainder were from two days to a fortnight overdue, but in one charge the rolls were not submitted till the 20th of March. The *kaingya* harvest succeeds the *kaukkyi* without a break and the rolls for this assessment were correspondingly delayed.

These delays are said to be due to the unsuitability of the notified date for their submission and to the inadequate staff. Proposals for an increase of the Land Records staff have recently been submitted: and the Financial Commissioner has now altered the dates of assessment generally for Upper Burma. This should ensure greater punctuality in submission.

In Sagaing the submission of the rolls for all harvests was late. The Deputy Commissioner while considering that the alteration of dates of submission would be a relief thinks also that greater punctuality can be obtained by stricter discipline. The rolls in the Lower Chindwin were late in townships to which a summary settlement had been extended, but the staff is now adequate and delays should not occur again.

In the Upper Chindwin the assessment rolls for all seasons were submitted very late. This was mainly due to the heavy work involved in the survey of the extensions of cultivation that have been made during the eight years that have elapsed since the original survey. A Probationer has now been placed in charge of the work and an improvement should follow.

In other districts the standard of punctuality was good. It is satisfactory to note that in Yamèthin all rolls were punctually submitted this year.

Office and Record-rooms.

9. The Register of transfers and changes (Register No. IX L.B., No. VIII U. B.) is reported to be carefully maintained in most districts. The Deputy Commissioner, Pegu, repeats his complaint that reports are not generally made by land owners. The Deputy Commissioner, Prome, considers that the people attach undue importance to this register and are often called upon to produce it before Courts of Law as documentary evidence in land cases. In Thayetmyo, it is reported, difficulty is still experienced in getting the people to understand the necessity of promptly reporting changes.

As a rule sales and mortgages seem to be fairly well reported but other details are not so carefully attended to. The Financial Commissioner has under consideration a revision of the forms.

Revenue Surveyors and thugyis' offices continue to be generally well looked after and an adequate amount of inspection has been done by Superintendents and Inspectors. The inspections of the Superintendents at Mandalay, Pegu and Bassein were particularly thorough. Akyab reports a marked improvement. The Superintendent in Pegu (Mr. Beechey) found most offices in great disorder. He has taken the matter thoroughly in hand and a great improvement is already noticeable. In Prome the office of the *taikthugyi* of Tarokmaw was burnt down and nearly all the Government property was lost. In Ma-ubin the Revenue Surveyor's house at Nyaungyaung was burnt down but most of the Government property was saved. In Bassein the office of the Revenue Surveyor of B Bôkchaung circle was also burnt down and all Government property except the Settlement Registers and one chain was lost. There is a slight improvement in the offices in Thatôn. In Minbu district a Surveyor's office in the Salin Inspector's charge was burnt down. Most of the records were saved but all instruments and the heavier articles and furniture were burnt. In Magwe one office was burnt down and the maps and registers of two seasons were lost.

In Katha an office was burnt down and the registers destroyed. Many of the offices in this district are not fully equipped, but the matter is being attended to. More inspections of Surveyors' offices by Inspectors seem necessary in Sagaing. In the Upper Chindwin the Surveyors have not yet opened offices at the headquarters of their circles, the records being kept at the Subdivisional headquarters.

In Yamèthin a few Revenue Surveyors have this year built offices and substantial houses to store their Government records and all have been provided with the necessary office equipment.

In Myingyan two *kwin* maps were lost and in Pegyet circle the whole of the maps and registers for 1904-05 were destroyed by fire while the Revenue Surveyor was away in headquarters.

Loss by fire has been somewhat considerable this year, but on the whole, all possible precautions were taken and the records are as a general rule carefully looked after.

The Land Records offices at Yamèthin, Kyauksè, Myingyan and Tharrawaddy were inspected by the Commissioners.

The Deputy Director and the Assistant Director inspected the offices and record-rooms of 26 districts. The offices were generally in good order. The Pegu office had got into great confusion, but much has been done during the past year to put it to rights. Attention is now being devoted to the record-room which is in some disorder. The Prome office is now in good working order. The new offices and record-rooms at Akyab and Kyaukpyu have not yet been completed. There has been a very sensible improvement in the Akyab office. The Ma-ubin record-room is much congested, but the transfer of the Pyapôn records to Pyapôn where the record-room is approaching completion will give relief. The office also requires attention. The Pyapôn office is in as good order as can be expected considering it is located in a private house in the town. In Bassein record-room napthaline is regularly sprinkled to keep off insect attacks. This is a good idea. The ante-room accommodation in the record-room at Toungoo is inadequate. The racks for maps in the Tavoy record-room are under repair and an ante-room is badly wanted. In Mergui some structural alterations are also necessary. The Thayetmyo record-room is in much better order than last year, as is also that at Minbu. In Magwe the record-room is still unarranged as the Public Works Department have not yet completed the interior fittings. The new record-room at Katha was completed in March 1905. At Sagaing a new building is under contemplation.

In general the offices are in good order while there is a marked improvement in the arrangement of record-rooms.

The importance of the thorough training of apprentices is still being insisted on. Upon the thoroughness of this training depends the efficiency of the future district staff and too much attention cannot be devoted to it.

Maintenance of the survey.

10. In Akyab an area of 35·21 square miles is estimated for survey by a special staff. During the year the local staff surveyed 9,199·42 acres. In Hanthawaddy 3,139 acres were revised and the interior details of 6,746 acres of extensions or grants were surveyed. In Tharrawaddy the local staff surveyed 20,823 acres. In Pegu the staff was employed in the further verification of areas proposed for resurvey. The proposals now amount to 523·69 square miles "ripe for survey." In Prome the local staff revised 2,916 acres. In Ma-ubin the local staff surveyed 38,556 acres. In Pyapôn the local staff revised 25,566 acres, while the proposals for revisions by a special party were thoroughly examined. In Bassein such revisions as are necessary can be managed gradually by the local staff. In Henzada revisions are only necessary in unprotected flooded tracts. It is questionable if they are justifiable. In Myaungmya the local staff surveyed 12,937 acres of cultivation. Proposals for revision of some 48,000 acres by a special staff have been submitted. In Toungoo 15,264 acres of extensions and 3,708 acres of interior details were surveyed by the local staff.

It is anticipated that extensions in the Pyu, Oktwin and Tantabin townships may pass beyond the power of the local staff and that a special party may be necessary.

In Thatôn 23,767 acres were revised: in Amherst only 2,500 acres. Proposals for considerable revisions in anticipation of resettlement have been submitted from these districts and it should be clearly understood that in these circumstances a special effort must be made by the local staff. The area for revision in Amherst now amounts to 102·37 square miles.

In Minbu 520 acres of paddy land were newly surveyed and 7,992 acres resurveyed: and 6,480 acres of *ya* land were surveyed and 13,478 acres resurveyed. The surveys have now been all brought up to date. In Magwe considerable new surveys and revisions were done by the local staff. The incorrect area has been reduced to a minimum. In Mandalay minor revision surveys and surveys of extensions and changes in the Canal Tract to the extent of some 10,000 acres were disposed of by the local staff. An area of 760 acres outside supplementary survey limits was also surveyed. It is anticipated that the Canal Tract will be ripe for revision in another two years. In Katha all surveys are said to have now been brought up to date.

In Sagaing 9,672 acres are said to require revision. This must be done gradually by the local staff. Application for a special staff, as suggested, cannot be considered. In the Upper Chindwin 4,850 acres of extensions were surveyed by the local staff. In Kyauksè the 4,147 acres requiring revision must be undertaken by the local staff. In Meiktila certain resurveys will be necessary in *kwins* below the Nyaungyan-Minhla tank owing to irrigation changes.

These special surveys were carefully checked by the Superintendents and Inspectors of Land Records and the general standard of the survey was good.

In addition small areas of *pottas* were also surveyed in several districts by the local staff. The areas this year were insignificant.

Preservation of permanent survey marks.

11. The inspection of permanent survey marks has in most districts been very thorough. The condition of survey marks in the Akyab district is reported to be very bad. During the year every mark in the Pegu district was visited by the Revenue Surveyor in company with the village headman concerned. There will therefore be no excuse for failure to properly maintain them in the future. The deplorable condition of the permanent survey marks in this district may be gauged from the fact that of 23,236 marks no less than 13,553 or 58 per cent. of the whole cannot be found. The percentage of marks protected in Myaungmya is low and more attention must be devoted to this matter in the future. In Toungoo it is reported Karen headmen are particularly remiss in this part of their duties. The necessary orders have been issued on the subject.

In Amherst 25 per cent. of marks visited were lost the majority of these being situated in waste areas still uncultivated. More attention should be given to the proper upkeep of the 2-inch skeleton maps. In Magwe it is reported 1,186 marks principally on the islands along banks of streams and in forests will have to be abandoned. Survey marks in Katha are reported to be in excellent condition. In Yamèthin two prosecutions under section 434, Indian Penal Code, and a number of fines under the Burma Boundaries Act have had a salutary influence and the protection of survey marks is said to be better attended to in consequence.

In general headmen, especially revenue collecting headmen, are paying more attention to this subject while Inspectors and Revenue Surveyors on the whole perform this part of their duties conscientiously and thoroughly.

Miscellaneous duties.

12. Tax-tickets and cattle death registers were regularly checked in the course of field inspections. One case of fraud was detected in Tharawaddy and one in Pegu. In Ma-ubin a headman altered the receipts to larger amounts than were due in three cases. All these frauds are under enquiry. In Henzada it was found in several cases that while the assessment was correct the entries on the receipt had been subsequently increased presumably for the purpose of raising more money on mortgage. In Amherst in a few cases of wrong assessment the surveyors had to make good the amount to the assessees. In Minbu only three cases of tampering with figures were detected. In Magwe slight discrepancies were found in two cases only. In Mandalay it is noted that Subdivisional and Township Officers do not perform their share of inspection under this important head and orders are being issued to correct this. In Shwebo no checking of tax-tickets was done during the year. In Sagaing two cases of fraud suggestive of collusion between the section writers and the thugyis concerned are under investigation. In Myingyan a headman increased the demand by altering figures in 15 tickets. He was prosecuted, convicted and sentenced to 18 months' rigorous imprisonment.

District Officers checked a considerable number of tax-tickets during their *kwin* inspections.

Grazing-grounds received a good deal of attention during the year under report. In Akyab 57 new grazing-grounds with an area of 6,892 acres were allotted; 27 were newly demarcated and 37 old grounds were redemarcated. There were various exclusions and additions. All grounds are being gradually redemarcated; 39 cases of encroachment were dealt with, eviction and fines following. Good work is now being done in this district in connection with grazing grounds. In Kyaukpyu the Superintendent should devote more personal attention to this branch of his duties. Too much is left to thugyis and Inspectors.

In Tharrawaddy all grazing-grounds were re-demarcated during the year, and a number of prosecutions for trespassing were instituted. Attention was devoted to the subject in Pegu. The proposed revision of survey should be followed by a revision of grazing-grounds. There is considerable room for improvement in the matter of grazing-grounds in Pyapôn. Attention is now being directed to the subject. During the year 28 new reserves with an area of 2,698 acres were made in Bassein, and other minor revisions were carried out. Demarcation in this district is particularly good. In Myaungmya 16 new grounds with an area of 3,603 acres were reserved: and 11 more with an area of 6,004 acres are under consideration. In cases of encroachment very severe punishments have been inflicted. This should have a deterrent effect. In Toungoo 81 grazing-grounds proposed by the Settlement Officer in 1899-1900 were demarcated. Some necessary revisions of area were made in Amherst.

In Mergui the Superintendent should devote more personal attention to grazing-grounds.

District reports evidence an increasing amount of attention to this subject while Magistrates are dealing more firmly with clearly proved cases of encroachment.

The condition of the 1-inch and 2-inch topographical maps formed the subject of a special enquiry at the time of the visit of the Indian Survey Commission to Burma. As a rule they are well maintained. It should be insisted on that corrections are first to be accurately surveyed on the 16-inch maps and then reduced by

pentagraph on the topographical maps. The Pegu, Amherst, Ma-ubin and Pyapôn maps require attention.

In Rangoon Town District 2,406 permanent boundary marks were visited : 113 were found damaged and 41 missing. These were all repaired or replaced at the expense of land owners.

In Mandalay the operations in connection with the assessment of Cantonment house sites and agricultural lands continued to be under the control of the Superintendent of Land Records. The total number of sites assessed during the year was 3,852. The area cultivated was 786 acres as against 751 acres last year and the revenue increased by Rs. 48.

Owing to an unfortunate order issued by the Secretary to the Cantonment Committee to plot holders to whitewash the clay cylinders demarcating each site in order to make them conspicuous the occupants instead of moving back their fences, shifted the demarcation pipes from inside to outside them, in some cases a foot and in others even two or three feet thus upsetting the whole accuracy of the block survey on the scale of 40 feet to the inch made of the Cantonment-house sites in 1894-95. It will take a considerable time to replace these marks.

In Shwebo a survey of Ye-u Town on the scale of 64-inch = 1 mile was carried out by one surveyor and an Inspector during the rains of 1904-05.

Village headmen scheme.

13. In Prome one circle was broken up into village headmen's charges during the year. Only seven circle thugyis nominally took part in supplementary survey work and their work was not of much value. In Ma-ubin only six circles remain under circle thugyis. In Pyapôn the Pyindaye thugyi worked very badly. In Bassein only three circle thugyis displayed any personal interest in their work. In Myaungmya the conduct of thugyis was, generally, satisfactory. In Toungoo one circle was brought under the village headmen scheme. Only five circle thugyis remain. Two thugyis were removed in Amherst for gross irregularities and malpractices. Slow progress has been made in this district with the introduction of the scheme, but on 1st July 1905 five circles will become vacant and the scheme will be introduced. In Tavoy all thugyis, except two, gave considerable help with supplementary survey work.

Conduct of the Supplementary Survey Staff.

14. The work of Superintendents has, in almost every instance, been well reported on by Deputy Commissioners and Commissioners. Probationers placed in temporary charge of districts have done fairly well and give promise of becoming efficient officers. Except in Pegu, Pyapôn and Sagaing the Subordinate Staff is said to be of good quality. In Pegu they are said to be deficient both intellectually and physically ; in Pyapôn intellectually and in Sagaing to be undisciplined. The respective Superintendents are taking them in hand and already an improvement is reported from Pegu and Pyapôn.

On the whole the conduct of the subordinate staff has been very good this year. Amongst Inspectors only five were punished, and of this number, only one was removed from Government service. One Inspector, in Myingyan, was appointed to officiate as a Myoôk.

Amongst surveyors removals and dismissals were more numerous this year than last : no less than 37 men being thus punished. In most of these cases, however, the offences were quite apart from their professional duties. Generally a firmer discipline is being maintained, the incompetent are being weeded out and the quality of the department improved.

The usual number of minor punishments for minor offences were imposed.

Inspection of field-work, Statement II.

15. During the year the Director, Deputy Director and Assistant Director inspected field work in 22 districts. One hundred and fifty-seven *kwins* were checked, falling in 97 surveyors' charges under 51 Inspectors. The work was good in 89 *kwins*, fair in 55 and poor in one *kwin* each of Hanthawaddy, Ma-ubin and Sandoway. The principal errors detected were minor survey errors, fallow and crop-marking and incorrect numbering of holdings. Statistical work was generally good.

Mr. Todd-Naylor, Commissioner of Meiktila, inspected six *kwins* in Yamèthin, two in Meiktila and one in Kyauksè. Mr. Leeds, Commissioner of Arakan, inspected one *kwin* in Akyab district.

The number of *kwins* inspected by Deputy Commissioners was 187 as against 121 last year. Mr. W. J. Smyth in the Upper Chindwin did no less than 33 and Mr. English in Bassein inspected 22. Mr. Christie in Pegu did 16 and Messrs. Gaitskell and Wallace 13 each. No inspection was done by the Deputy Commissioners of Hanthawaddy, Prome, Myaungmya, Minbu, Magwe and Mandalay and only one *kwin* each by the Deputy Commissioners of Kyaukpyu, Sandoway, Pyapôn, Amherst and Sagaing.

Inspections by Subdivisional Officers increased from 578 to 600. Amongst the most energetic were—

Messrs. H. A. Brown, C. S., and J. A. Cope, C. S., Maung Chin Hlaw, Maung Po Hnit, T. D. M., Maung Tin Gyaw, T. D. M. (since deceased), Maung Myit (2), Maung Po Si, Maung Po Thein (1), Maung Po, Maung Kyin Gon and the Subdivisional Officer of the Mingin subdivision.

In most districts of Lower Burma and in a few in Upper Burma, however, the amount of inspection done was quite inadequate and in most cases the Commissioners are drawing attention to the fact and calling for explanations.

The number of *kwins* checked by Township Officers increased from 1,178 to 1,486 and the following officers are favourably reported on for work in this direction:—Maung Mra Tha, Maung Po Thu Daw, Maung Ba Kho, Maung Kyaw Zaw, Maung Gale (4), Maung Thin, Maung Po Aung, Maung Shwe Pan, Maung Po (6), Maung Po Thin, Maung Po San and Maung Paw Shan.

Akyab, Tharrawaddy, Henzada, Amherst and Tavoy are the only districts in Lower Burma where an adequate amount of inspection was done. Thayetmyo, Magwe, Kyauksè and the Lower Chindwin show an entirely inadequate outturn for Upper Burma. It is hoped that Commissioners and Deputy Commissioners will keep their subordinates up to the mark in this branch of their duties.

Superintendents inspected 2,235 *kwins* as against 2,175 last year. Mr. Wood of Shwebo again heads the list with 236 *kwins*. Messrs. Palmer, Ripley, Connor and McKertich were also very energetic in this line. The amount of inspection done by Mr. Cooper in Mergui was small, but he had special work in connection with revision surveys. In Ma-ubin ordinary inspection was interfered with by special survey work but the total amount of inspection done was inadequate. A good standard of inspection was maintained in Akyab. In Hanthawaddy the Superintendent should go further afield: parts of the Twante and Kyauktan subdivisions have not been visited by him at all. Inspection in this district is generally badly arranged and more attention must be paid to it. In Tharrawaddy inspection was generally good but some *kwins* which have not been visited for three years should be attended to. In Pegu though the actual number of *kwins* done was small Mr. Beechey was fully and well employed. A stricter supervision in Pyapôn has led to a marked improvement in the work of Inspectors and Surveyors. Inspections in Bassein were as usual good. In Toungoo inspection decreased owing to the extra work imposed by the revision surveys and the demarcation of grazing grounds. In Amherst the Superintendent had very heavy work in connection with revision surveys and *pottas*. He also made a useful tour in the unsurveyed tracts of the district. In Thayetmyo the Superintendent inspected 58 *kwins* in unsurveyed tracts. In Minbu the Superintendent visited 20 *kwins* twice. There is a marked falling off in Magwe due to much time having been devoted to the instruction of surveyors in their duties. In Mandalay a marked improvement in quality of work is reported. The Superintendent's number fell: but he had much special work. There has been a necessary stiffening of discipline in Katha. Inspection in Shwebo was good all round. In Sagaing methods have been improved and there has been a marked improvement in quantity and quality in Yamèthin.

The total number of holdings checked by the Land Records Staff and by District Officers was 558,959, in 89,554 or 16% of which errors of various kinds were met with. According to the abstract statements of inspections furnished by the inspecting staff of the Department, the percentages of error discovered

under the several main heads are as follows, *viz*, in survey, in respect to new plots or extensions, 18, chiefly mistakes of under half an acre, in fallow and crop-marking 1, in classification and rates ½, and in statistical errors 4. The resulting *net* increase in revenue due to all inspections amounted to Rs. 11,484.

Training of Civil Officers in Survey and Land Records work.

16. During the year seven Assistant Commissioners were put through a course of Surveying and Land Records work, of whom six passed creditably at the final examination. Of three Extra Assistant Commissioners and five Myoôks who also received instruction all qualified by the required tests, and of these four did particularly well. One Extra Assistant Commissioner is still under training, while two Myoôks were only partially trained when they were taken off for other duty.

Survey Schools, Statement III.

17. The number of Government Survey Schools continues at 18. Most of the schools are accommodated in Government or Municipal buildings. The total number of pupils on the rolls of the schools on the 31st March was 414, of whom 33 per cent. were exempted from the payment of the school fee. There was a marked falling off in the attendance in Kyaukpyu, Pegu and Henzada and to a smaller extent, in Prome and Toungoo. The best attended schools were those of Sagaing, Meiktila, Pakôkku and Moulmein. The diminution in numbers in the majority of the schools was due in great measure to the application of the new tentative rule making the IVth Standard compulsory for admissions into the Lower Burma schools. A report on the working of the measure was submitted to Government and the rule in question has since been cancelled. A satisfactory feature of the schools is the increasing number of pupils who have passed the VIIth Standard. The attendance at class was generally regular, but it was indifferent in Insein and Katha. Sixty-eight scholarships of the 1st grade and 144 of the 2nd grade of the value of Rs. 10 and Rs. 5 each per mensem respectively were awarded. The distribution rests with Commissioners. The amount paid on account of scholarships during the year was Rs. 14,499. A sum of Rs. 480 was allotted as prizes to the various schools. The proportion of the sons of thugyis and agriculturists to those of traders and others who entered as pupils was as 3 is to 1, which is an improvement on former years in favour of the former. A large number of certificated men received employment as Surveyors in Land Records offices and the various special and revision survey parties at work in the Province. More attention should be paid in Land Record offices to the practical training in surveying and Land Records work of Syndicate certificate-holders; in Pegu, Mandalay and Bassein the matter is well attended to, but not so in most of the other districts. The total expenditure on account of the schools amounted to Rs. 39,538, while the total income from fees and other sources was Rs. 5,627; the net cost was thus Rs. 33,911. This works out to Rs. 84 per pupil, or Rs. 12 more than last year. This increase is due to the diminished attendance at several schools. At the Syndicate examination of April 1905 the number of candidates from Government schools who succeeded in passing in Surveying, Arithmetic and Revenue Law were respectively 203, 152 and 113; or 56, 45 and 33 per cent. of the total number presented in each of those subjects. The results of the examination in surveying were good, in Arithmetic fair, and in Revenue poor. More attention should be paid to the teaching of the last two subjects, which were much neglected in particular in Insein, Toungoo, Katha and Mônywa. The schools that did best in surveying are Minbu, Insein, Sagaing, Moulmein and Ma-ubin, while the ones that fared worst are Mandalay, Toungoo and Yamèthin. The 'Clancey' medal for proficiency in surveying was won by a student of the Ma-ubin school. All the schools, with the exception of Pakôkku, were inspected by the Deputy Director or Assistant Director. On the whole the schools were found in good order, and they adequately serve the purpose of the Department. The teachers, as a class, worked well; the ones who may be singled out for special commendation are the teachers at Amherst, Minbu, Sagaing, Bassein and Ma-ubin; while those whose work was unsatisfactory were the teachers at Mandalay, Katha and Yamèthin. The Superintendents paid frequent visits to the schools under their control; but more attention should have been paid to the internal working of the school at Insein. The Deputy Commissioner of the Lower Chindwin inspected the school at Mônywa.

SECTION II.

AGRICULTURE.

18. *Collection of Economic Products.*—Many new specimens of different products collected through the media of District Officers were sent to the Indian Museum, Calcutta, to the Imperial Institute, London, to the Inspector-General of Agriculture, the Government Entomologist and the Reporter on Economic Products.

19. *Agricultural Shows.*—In the year under review agricultural shows were held at the fixed centres of Kyônpyaw (Bassein district), Letpadan (Tharrawaddy district), Pyawbwè (Yamèthin district), Bhamo (Bhamo district), and Taunggyi (Southern Shan States). The proposed show at Sagu Town (Minbu district), was abandoned owing to the sudden outbreak of rinderpest in the adjacent districts of Thayetmyo and Magwe and to the prevalence of foot-and-mouth disease in the Pakôkku district. An exhibition was also held at Ma-ubin for the encouragement of the growth of Havana and Virginian tobacco. The Local Government made liberal grants towards these Agricultural shows in addition to the Rs. 1,000 which has been allotted to Burma by the Government of India. Further, 12 medals were forwarded by the Inspector-General of the Civil Veterinary Department, for presentation at the various shows for the encouragement of indigenous cattle-breeding by the land-holding classes, and the Superintendent, Civil Veterinary Department, offered separate prizes to the value of Rs. 200, at each of the two shows of Letpadan and Sagu, for foals bred from Government Stallions. The Burma Railways Company and the Irrawaddy Flotilla Company again this year very kindly allowed freight concessions in favour of exhibitors and exhibits at these shows and every advantage was taken of the same.

The cost of the several shows held in the year is exhibited below :—

Names of Shows.	Provincial Grant.	Imperial Grant.	Total cost.
	Rs.	Rs.	Rs.
Kyônpyaw	1,614	200	1,814
Letpadan	1,250	200	1,450
Pyawbwè	1,138	200	1,338
Bhamo	1,450	100	1,550
Taunggyi	957	100	1,057
Total ...	6,409	800	7,209

Kyônpyaw.—In spite of the fact that the show was widely advertised, it was a failure. This was due to the lack of interest taken in the exhibition by the Burmese agricultural community and but for the exertions of the officials it would have been a complete *fiasco.* The buffalo exhibits were good but the exhibits of ponies and poultry were very few and of no particular merit. The agricultural implements and industries were but poorly represented. It has been decided to abandon this show.

The Letpadan Show was well attended this year. The number of exhibits were not so numerous as last year, but this was due to the prevalence of rinderpest in the district. Entries for the oxen and buffalo bull classes were excellent, but the exhibit of milch cows was poor. There was a distinct improvement this year in the exhibits of produce and industries. That the show was a success is largely due to the interest taken in it by the Subdivisional and Township Officers of the district and especially by Maung Gyi, Township Officer, Letpadan, Maung Pan Tha, Vice-President of the Municipality, and Maung Lu Gale, the Municipal Secretary. Major Evans, Superintendent of the Civil Veterinary Department, helped the judging committee in awarding the prizes and the Deputy Director gave away the prizes.

Pyawbwè.—The Show which is the first held at Pyawbwè in recent years was held on the 15th, 16th and 17th February 1905. The number of cattle exhibited was small and the quality was not as good as one would have expected.

As regards the other entries for crop produce and agricultural implements, they too were few in number and inferior in quality. The agricultural community have taken but small interest in the show but this was due perhaps to the indistinct idea the Burmese have of what such a show should be. The Commissioner considers that the show should be continued and that it will be more successful in future years. The show was visited by the Inspector-General of Agriculture, the Deputy Director and the Superintendent, Civil Veterinary Department.

Bhamo.—The show this year was well attended and the entries as regards live-stock were more numerous than the year before. The buffaloes both bulls and bullocks were of a very good stamp and were the best exhibits of the show. The oxen exhibited were few and of a poor class. The exhibits of mares and geldings were most disappointing although the entries were numerous; while those of crop produce and poultry were distinctly good. It has been proposed to institute next year an annual fair in connection with the Agricultural show, as it is thought that it will help to make the show popular. Major Evans attended this show.

Taunggyi.—It is satisfactory to note that the exhibition was a decided success. This was due to the very great efforts made by the Political Officers, to exhibit to the Lieutenant-Governor, who was present at the show, the produce and cattle of the Southern Shan States; and also to the interest taken by the Shan Chiefs in the show. There was an excellent display of oxen, buffaloes, brood mares and stallions, also of wheat, oats, rice, tobacco, cardamoms, coffee and vegetables. In addition, a collection of minerals was displayed including coal, gold, silver, lead, iron, and tin ores. The decision on the exhibits as a whole was that the cattle were very fine; that the breed of ponies was deteriorating and that the produce was splendid. As an adjunct to the Agricultural Shows an Arts and Crafts Exhibition was also held and attracted several hundred exhibits from all parts of the country. The exhibition was deemed an unqualified success. The prizes were distributed by His Honour the Lieutenant-Governor, who was present with his staff.

A grant of Rs. 500 was also given to the Rangoon Horse Show. The Deputy Director and Superintendent, Civil Veterinary Department, were *ex-officio* members of Committee.

20. As in the previous year five experimental gardens were maintained by Government at a net cost of Rs. 8,381-14-8, namely, those of Bhamo (Sinlumkaba), Chin Hills (Falam) Katha (Katha), Myitkyina (Myitkyina and Sima) and Southern Shan States (Taunggyi). The total expenditure under all heads, inclusive of the upkeep of the garden and the purchase of seeds, etc., amounted to Rs. 10,546-13-5 during the year and the receipts from the sale of garden produce were Rs. 2,164-14-9. The establishment, except at Taunggyi, where in addition to Mr. Colyear who was engaged as head gardener, an extra under gardener was appointed, has been the same as in the previous year. Mr. Colyear is a clever gardener and the garden has improved already under his supervision.

Experimental gardens: Statement IV.

Four probationers are learning gardening in Taunggyi.

Bhamo.—The progress of the Sinlumkaba gardens was fair. As the climate was found unsuitable for the culture of the more delicate and thin-skinned fruits such as plums, cherries, apricots and nectarines, no attempt was made to plant fresh trees. Headmen of neighbouring villages failed to take any interest in the fruit-growing industry though offers of trees were made to them, free of charge. A large number of young trees was added to the stock of the orchard by grafts and cuttings. The vegetable and flower gardens left nothing to be desired and were excellent. Several neighbouring headmen have started small market gardens and have a ready sale for their produce. The new nursery at Hpaksum Chet had to be abandoned as the site was condemned. A better site well sheltered from high winds in the vicinity of the new quarters of the Civil Officer, has been selected and it is hoped will prove favourable for grafting and budding experiments.

Chin Hills.—There was a steady improvement in the fruit orchard at Falam and a hundred-weight of ripe plums and greengages of good flavour was obtained for the first time since the orchard was started. From seven trees a total of 94½ lbs. of fruit was obtained. Some 11 trees obtained from Taunggyi in the previous year died,

due probably to injuries sustained in transit, while seven trees obtained from Saharanpur also died. These losses were compensated for by the increase in peach trees, the result of successful grafting of the cultivated fruit on to the wild species, and by a number of small greengage, plum and apple plants raised from cuttings from the old trees. The fruit trees at Tiddim and Haka did not come up to expectations as the fruit did not ripen properly before the rains set in. The peaches grew to a good size and 300 lbs. of the fruit in a semi-ripe state were obtained at Tiddim. The fruit was of poor quality and no sale was consequently obtained. The nectarine and apple trees did fairly well. At Haka the mulberry trees are in a healthy condition. The vegetable gardens at Tiddim and Haka were very fair and a good supply of vegetables was obtained for which there was a ready sale. Owing probably to the substitution of stable for cattle manure, the strawberries did not thrive well and the crop was a poor one, only 92 lbs. of the fruit being obtained. Onions also did not do well during the year but the present crop promises well. The cultivation of potatoes by the Chins has been poor and several reasons are given for this. An experimental cultivation of 50 lbs. of potatoes was tried at Tiddim with good results, but it is to be regretted that experiments with wheat and oats should have proved a failure, and it is a matter for consideration whether the cultivation should be discontinued or not. Mr. Bateman experimented at Tiddim with the "Radiocola bacteria" known otherwise as "the nitrogen absorbing bacteria." The bacteria only forms nodules on the roots of a few varieties of plants, mostly leguminous. They are most partial to clover but are not specially adapted to beans or peas. As clover was not procurable peas were planted in one lot of beds without the ground being manured after each planting As the crop died off, the roots were examined for nodules but none were found in the first three crops. The roots of the fourth crop were found profusely covered with nodules. An extract of these nodules, after several failures, resulted in a clean culture in a jelly of gelatine and Brands essence of mutton and after four days a colony of "Radiocola" was found. The colonies to the naked eye appeared oblong green patches on a mossy-like gray growth. Under a miscroscope the bacteria look like a brown fruit insect. Experiments to adapt the bacteria to different crops will be tried. Messrs. Street and Bateman deserve commendation for the improvement in the Falam and Tiddim gardens due to their energy and the interest taken by them.

Katha.—No new trees were planted during the year but those planted formerly are doing well. The peach crop was not a success as birds and insects destroyed the fruit. The vegetables continued to thrive. The strawberries, got lately from Taunggyi, were transplanted and are doing well. Experiments with Manila hemp and cotton seed from Myingyan bid fair to prove a success. Some rope was made from the hemp and is said to stand a heavy strain when dry. Mr. Carrapiett, Superintendent, Land Records, took considerable interest in this garden. The garden was inspected by the Assistant Director during the year.

Myitkyina (Myitkyina Garden).—Peaches have not done as well as last year and the nectarines, apricots, cherries and pear trees have not yet borne fruit. A few fruit formed on the apple and plum trees but did not ripen. The Avocada pears are doing well. Loquat, oranges, pomelos, blackberries and figs are thriving but the climate does not appear favourable for the cultivation of cherri-moyer and grape vine. The vegetables grown from Sutton's seeds again did well. The *mocha* coffee tree is doing very well. *(Sima garden)*—The peach, nectarines, greengages, plums and oranges all bore fruit. Apples, apricots and pears blossomed properly. English vegetable seeds as well as potatoes did well. Only two of the ten coffee trees planted in the previous year are alive. Tea seeds were sown but it is too early to foretell results.

Taunggyi.—All the fruit trees are doing well and most of them bore fruit. The nectarines ripen too slowly and are spoilt by the early rains. Cultivation of Avocada pears was tried but was not very successful. Sweet potatoes did very well. Two new kinds of potatoes have been obtained from Hamburg for cultivation ; the species are said to be very hardy. Ten pounds of oats were sown as an experiment and the result was very satisfactory, 297 lbs. of grain being obtained. Oat cultivation was also tried in the Yaunghwé State and Sinhe with success. The

Arabian coffee seedlings have grown into sturdy young plants and are thriving. Tea growing was tried and the seeds are just beginning to germinate. Cotton seeds from Myingyan which were sown have germinated very well. The cultivation of cotton promises to be an interesting experiment as the local cotton is poor, the boll being small and the staple short.

Sericulture.

21. Owing to the complete failures experienced during the previous year it was decided not to experiment largely with silk worm eggs and only 20 ounces of the best eggs were therefore obtained during the year from France for experimental purposes in the Southern Shan States. It was hoped that, as the climate of the States is temperate and to a degree similar to that of Kashmir where the foreign silk worm has succeeded so well, the experiment would succeed. The experiment, unfortunately once again proved a failure. Only a few eggs were hatched but the worms died shortly after. The death of the silk worms is ascribed to the mulberry leaves being tough and uneatable and to the eggs having hatched a couple of months before the new leaves in the tree began to appear. Without expert supervision there is but little chance of any success with experiments of this character.

Experimental cultivation.

22. *Tobacco* (*Nicotiana tobacum.*)—A supply of 108 lbs. of Havana and 81 lbs. of Virginia tobacco seed was procured from America during the year and distributed to 22 districts. Complete failures are reported from 8 districts due in some cases to heavy rains; in others to want of proper care; while in two or three districts it is reported that the soil is not favourable for the cultivation. Partial successes were obtained in nine districts while the cultivation continued to prove a success in Henzada, Minbu, Mandalay, Ma-ubin and Kyauksè. The outturns were generally heavy, varying from 111 lbs. to 1,000 lbs. per acre, while the prices realized averaged from Rs. 36 to Rs. 50 per 100 viss and are reported to have been considerably better than those obtained for the country variety. The Havana variety continues popular especially in Ma-ubin, which has become an important centre for its cultivation and where the area under cultivation during the year increased by 1,139 acres. The exports of this variety are said to realize prices equivalent to the best Indian tobacco, and the sale of locally rolled cigars with the Havana leaf is steadily on the increase.

A tobacco exhibition was held at Ma-ubin in July under the presidentship of the Commissioner of the Division (Mr. Porter) and prizes awarded for exhibits of the best Havana leaf tobacco. The samples produced were more or less mixed with other varieties, and indigenous tobacco for which a special prize had been offered, was not represented. The leaves of the Havana tobacco exhibited are said to have been of good quality but the curing left much to be desired.

During the year under review Messrs. Jamini Mohan Biswas, B.A., of the Agriculture College, Bengal, and Rajanikant Bhoumik from the Cooch Behar State were deputed to Burma, to study the local methods of tobacco curing and cigar rolling and all the chief manufacturing centres were visited by them with this object.

Amongst the other agricultural experiments of the year the following were the most important:—

Ground-Nuts.—The cultivation of this was continued in Yamèthin with seeds obtained from Myingyan; the experiment has been very successful.

English Vegetable seeds were as usual distributed for cultivation principally in Upper Burma and the results generally were satisfactory. Where the cultivation failed, the causes were mostly heavy rains and destruction of seeds by insects.

Tea (*Camellia theiferea*).—Experimental cultivation with seeds obtained from Kunsong was tried in eight districts but the results were very discouraging, as failures were for the most part reported. In one district the seeds sprouted and the young plants thrived during the rains but withered and died as soon as the hot weather set in.

Coffee experiments with Liberian coffee proved successful only in Thatôn. Only two plants of Arabian coffee of the ten planted in 1903 are alive. The cultivation of coffee in the Southern Shan States is extending gradually. In the Upper Chindwin coffee has already been grown successfully in Kindat.

Cotton-Experiments with three kinds of Chinese cotton known as Shanghai, Wahu and Ningpo were tried. The only success, and that only to a small extent, was with Shanghai in Thayetmyo. Experiments with "Sea Island" in five districts have not been very successful but further attempts are being made as also with the Pernambuco tree cotton.

In accordance with the orders of the Government of India experiments in the improvement of indigenous cotton by careful selection of seed were undertaken and large quantities of carefully ginned seed were issued. It is too early yet to give the result of the experiment which will be separately reported on later.

Further experiments with Manilla Hemp (*musatrutitis*) were not very successful.

In Yamèthin great success was achieved with various kinds of paddy obtained from other districts but *jowar* (*san pyaung*) transferred from Sagaing failed.

The Avocada Pear was further experimented with during the year but with unsatisfactory results. Guavas failed owing probably to want of care and method in the cultivation. Oats were very successful in the Shan States and Myitkyina and fairly so in Bhamo and Kyauksé but owing to the heavy rains failed in Katha and the Lower Chindwin. Beans from Europe obtained from Messrs. Begbie and Company failed as also did the *Soy Bean* (*Glycine Hispida*) procured from Assam. *Ber fruit* seeds obtained from the Gwalior State gardens were tried in Myingyan with success. *Date Palm (Phœnix doctylifere)* was tried in Myingyan and Lower Chindwin with varying results. *China Grass* (*Rhea*) was very successful in several districts.

Miscellaneous.

23. The reports on Inland Trade Registration (annual and triennial) and the Season and Crop Report, as also the note on Rainfall Registration have issued separately. The rice and cotton fore-casts were published as usual; the former relating to the 15 principal rice-producing districts in Lower Burma and the latter to all districts in which cotton is cultivated inclusive of that grown mixed with other crops and in *taungyas*. The instructions regarding the preparation of the cotton crop estimates have been further elaborated in accordance with recent more detailed and extended orders of the Government of India.

The re-organization of the Subordinate Land Records Department has been lately sanctioned by the Secretary of State for India in several districts and the Land Records establishments have been slightly strengthened and the question of increasing others is under consideration.

The Inspector-General of Agriculture (Mr. Sly) visited Burma in the dry season and toured through the country in company with the Deputy Director. He enquired into the agricultural conditions and methods of the country and wrote a preliminary note on the organization of a separate department of Agriculture for Burma. Proposals on the lines of his suggestions are now under the consideration of the Local Government.

The Deputy Director attended the first meeting of the Indian Board of Agriculture at Pusa on the 6th January 1905 and following days.

Services of officers.

24. The Assistant Director, Mr. Clancey, F.R.A.S., had a very heavy field season and performed his duties with his usual energy and ability. With but few exceptions Superintendents and Probationers of Land Records have been well reported on. Those who from the difficulty of their charges and the excellence of their work may be singled out for special mention are; Mr. Beechey in Pegu, Mr. Haddock in Mandalay and Maung Pe Maung, Special Survey Officer, Katha. Messrs. Stubbs and DeSouza amongst the junior officers did very good work in Tavoy and Amherst respectively. Messrs. Purchase, Carrapiett, and Körper deserve credit for the marked improvement they have effected in their districts which had fallen into considerable disorder respectively in Pyapôn, Katha and Akyab.

RANGOON:
The 19th August 1905.

T. C. WILSON,
Settlement Commissioner and Director of Land Records and Agriculture, Burma.

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STATEMENT NO. I.—*Area under and cost of Supplementary*

District.	Total area.				Total assessment (including Cess in Lower Burma) on the area in column 5.	Number of Inspectors.
	Total in	Under occupation in	Under cultivation in	Under assessment in		
1	2	3	4	5	6	7
	Sq. MILES.	ACRES.	ACRES.	ACRES.	Rs.	
Akyab	1,921	627,572	543,602	613,979	1,673,635	5
Kyaukpyu	687	109,474	105,398	107,720	191,549	4
Sandoway	268	52,171	49,832	51,399	96,100	3
Hanthawaddy	2,621	1,178,810	1,135,408	1,177,964	3,788,419	8
Pegu	2,364	832,645	766,112	824,655	2,118,637	7
Tharrawaddy	1,159	460,074	439,199	456,014	1,191,370	5
Prome	1,724	344,894	326,762	342,730	536,106	4
Ma-ubin	1,648	435,932	417,347	434,264	1,085,108	4
Pyapôn	1,165	550,107	527,160	544,859	1,495,172	5
Bassein	2,223	622,931	557,445	620,456	1,528,756	8
Henzada	1,809	532,314	502,427	525,788	1,338,869	6
Myaungmya	1,827	586,064	526,460	583,849	1,654,741	5
Toungoo	1,497	329,856	304,840	293,027	695,103	4
Thatôn	2,254	628,864	601,825	589,696	1,194,259	6
Amherst	1,298	366,768	340,169	342,768	726,749	5
Tavoy	434	107,633	100,284	104,717	215,598	3
Mergui	577	82,827	76,039	82,059	162,693	3
Thayetmyo	577	98,123	81,843	97,289	137,777	2
Minbu	1,418	405,150	292,780	234,848	449,826	5
Magwe	2,915	903,441	473,715	‡	‡	8
Mandalay	700	234,563	167,908	155,898	716,568	5
Katha	845	163,707	145,149	143,656	168,171	5
Shwebo *	*4,138*	*1,681,122*	...	...	...	9
Sagaing	1,862	718,058	486,556	446,333	502,646	8
Lower Chindwin	2,051	668,212	475,189	436,587	320,725	5
Upper Chindwin	97	34,982	29,475	28,232	36,386	1
Kyauksè	564	243,110	178,858	171,231	714,882	6
Meiktila	1,559	592,870	370,104	298,355	418,369	5
Yamèthin	1,776	407,825	271,268	271,268	346,996	5
Myingyan	2,997	1,134,109	648,124	563,126	472,647	8
Total for 1904-05 ...	42,837	13,453,086	10,941,278	10,542,767	23,977,857	148
Total for 1903-04 ...	41,919	12,920,447	10,326,304	†10,040,806	22,203,617	140

* Under

† Revised

‡ Settlement rates

Survey for the year 1904-05 (Paragraph 7).

Number of Surveyors.	Total cost.							Remarks.
	Per square mile (column 2).			Per acre of the area in column 3.	Per cent. of the assessment in column 6.	Of Superintendence and inspection.	Of the survey staff.	
	Of Superintendence and inspection.	Of survey staff.	Of combined total.					
8	9	10	11	12	13	14	15	16
	Rs.	Rs.	Rs.	As.	Rs.	Rs.	Rs.	
72	7·27	18·72	25·99	1·273	2·98	13,959	35,970	
30	15·26	10·48	25·74	2·585	9·23	10,486	7,198	
11	31·97	16·75	48·72	4·004	13·59	8,567	4,490	
105	8·05	22·12	30·17	1·073	2·09	21,088	57,964	
75	8·44	15·57	24·01	1·090	2·68	19,946	36,796	
47	8·37	21·44	29·81	1·201	2·90	9,699	24,848	
47	7·51	13·21	20·72	1·657	6·66	12,945	22,770	
42	7·86	14·63	22·49	1·361	3·42	12,954	24,115	
51	15·41	21·95	37·36	1·266	2·91	17,950	25,569	
70	8·22	15·86	24·08	1·375	3·50	18,273	35,264	
61	7·20	17·02	24·22	1·317	3·27	13,022	30,781	
50	7·23	13·31	20·54	1·025	2·27	13,218	24,319	
39	7·73	12·03	19·76	1·435	4·26	11,580	18,005	
71	6·35	15·81	22·16	1·271	4·18	14,311	35,630	
41	8·50	13·16	21·66	1·227	3·87	11,037	17,088	
22	19·08	20·78	39·86	2·572	8·02	8,283	9,018	
16	15·15	11·92	27·07	3·017	9·60	8,743	6,877	
19	11·76	14·87	26·63	2·506	11·15	6,785	8,583	
45	9·58	12·10	21·68	1·214	6·83	13,578	17,159	
66	5·67	8·47	14·14	0·730	‡	16,529	24,700	
47	21·80	26·46	48·26	2·304	4·71	15,259	18,525	
34	14·92	17·43	32·35	2·672	16·26	12,607	14,731	
100	*5·08*	*8·41*	*13·49*	*0·531*	...	*21,006*	*34,781*	
80	9·93	18·05	27·98	1·161	10·36	18,489	33,605	
45	5·67	8·36	14·03	0·689	8·97	11,627	17,145	
6	1·12	1·32	2·44	2·351	14·13	2,357	2,783	
45	23·14	33·90	57·04	2·117	4·50	13,048	19,119	
54	9·51	12·77	22·28	0·937	8·30	14,825	19,909	
52	6·99	10·92	17·91	1·248	9·16	12,411	19,390	
70	5·91	8·61	14·52	0·614	9·21	17,722	25,791	
1,413	8·90	14·90	23·80	1·212	4·25	381,298	638,142	
1,367	8·85	14·83	23·68	1·229	4·26	371,035	621,539	

settlement.
figures.
not yet introduced.

STATEMENT No. II.—*Supplementary Survey Inspections for*

District.	Total number of *kwins* in tract.	NUMBER OF *KWINS* IN WHICH				
		By Land Records Staff.				
		Superintendent.	*Inspectors.*			Total.
			Number of Inspectors.	Number of *kwins* checked.	Average.	
1	2	3	4	5	6	7
Akyab	1,103	87	5	600	120	646
Kyaukpyu	551	75	4	300	75	375
Sandoway	291	62	3	209	70	271
Hanthawaddy	2,807	51	8	868	108	919
Pegu	1,207	24	7	477	68	501
Tharrawaddy	544	103	5	423	† 106	523
Prome	1,013	64	4	667	167	682
Ma-ubin	541	17	4	226	56	56
Pyapôn	627	66	5	405	81	386
Bassein	1,274	72	8	527	66	550
Henzada	849	80	6	575	96	613
Myaungmya	1,057	72	5	411	82	431
Toungoo	769	63	4	302	76	333
Thatôn	1,379	89	6	462	77	551
Amherst	864	34	5	336	67	355
Tavoy	424	43	3	197	66	225
Mergui	631	21	3	139	46	160
Thayetmyo	377	23	2	253	126	241
Minbu	839	54	5	958	192	672
Magwe	2,264	83	8	893	112	893
Mandalay	687	88	5	661	132	437
Katha	1,269	78	5	506	101	584
Shwebo*	909	236	10	659	66	712
Sagaing	1,210	123	8	944	118	989
Lower Chindwin	1,267	134	5	411	82	502
Upper Chindwin	188	12	1	101	101	101
Kyauksè	612	110	6	507	84	617
Meiktila	1,910	73	5	769	154	842
Yamèthin	1,886	82	5	593	119	675
Myingyan	2,793	116	8	1,063	133	1,179
Total for 1904-05	32,142	2,235	158	15,442	98	16,020
Total for 1903-04	†31,340	2,175	149	14,221	95	14,697

* Under
† Revised

the year 1904-05 (Paragraph 15).

THE FIELD WORK WAS TESTED										
		By District Officers.								
Difference in revenue due to corrections.			*Subdivisional Officers.*			*Township Officers.*				Remarks.
Total increase.	Total decrease.	Deputy Commissioner.	Number of Subdivisional Officers.	Number of *kwins* checked.	Average.	Number of Township Officers.	Number of *kwins* checked.	Average.	Total.	
8	9	10	11	12	13	14	15	16	17	18
Rs.	Rs.									
1,198	201	11	3	33	11	8	102	13	146	
1,564	40	1	2	4	2	4	24	6	25	
67	15	1	...	...	...	3	23	8	23	
201	120	...	3	21	7	7	39	6	60	
948	115	16	2	21	10	5	24	5	61	
746	68	7	2	23	11	6	69	11	99	‡ One Inspector was appointed after the Field Season and the average in col. 6 is that of four Inspectors.
260	...	...	3	24	8	7	33	5	52	
235	...	5	2	...	...	4	1	...	...	
1,124	102	1	2	7	3	4	19	5	27	
1,885	158	22	2	9	4	6	42	7	73	
664	164	12	2	43	22	6	105	18	160	
945	177	...	2	5	2	4	2	...	7	
736	179	3	2	15	8	7	54	8	72	
187	88	10	3	23	8	6	31	5	64	
615	...	1	3	48	16	7	64	9	113	
33	2	5	...	...	...	4	52	13	52	
123	48	3	2	10	5	4	14	4	27	
123	84	4	2	8	4	4	28	7	40	
949	484	...	2	25	12	5	64	13	83	
3	31	...	...	...	...	...	...	...	...	
1,349	997	...	2	28	14	4	95	24	123	
88	218	3	3	42	14	7	85	12	127	
...	...	...	...	...	...	...	...	...	...	
781	1,095	1	3	60	20	6	192	32	234	
269	184	4	2	14	7	5	15	3	33	
20	7	33	1	36	36	1	22	22	83	
761	346	7	2	34	17	3	28	9	69	
314	569	13	2	24	12	4	63	16	100	
385	42	11	2	27	13	5	122	24	160	
1,190	745	13	2	16	8	6	74	12	103	
17,763	6,279	187	58	600	10	142	1,486	10	2,216	
17,244	6,222	121	57	578	10	142	1,178	8	1,818	

settlement figures.

STATEMENT NO. III.—*Statistics relating to Government*

Station in which school is established.	Average number of pupils on the rolls in each month.	Number of days the school was in session.	Average number of days each pupil received tuition.	Number of pupils on the rolls on the 31st March.		
				Pupils paying fees.	Free pupils.	Total.
1	2	3	4	5	6	7
Akyab	20	250	245	25	...	25
Kyaukpyu	14	288	248	13	...	13
Insein	24	278	227	32	...	32
Pegu	11	274	232	13	...	13
Prome	19	287	239	12	5	17
Ma-ubin	20	275	262	23	...	23
Bassein	21	250	250	19	1	20
Henzada	13	271	259	12	1	13
Toungoo	23	264	219	18	...	18
Moulmein	29	250	249	30	...	30
Pakôkku	32	279	274	4	27	31
Minbu	25	264	239	4	22	26
Mandalay	24	272	248	17	9	26
Katha	13	271	253	16	1	17
Sagaing	33	258	214	17	12	29
Mônywa	24	255	230	7	18	25
Meiktila	32	274	254	7	24	31
Yamèthin	27	273	233	8	17	25
Total for 1904-05 ...	404	269	243	277	137	414
Total for 1903-04 ...	464	267	241	315*	140	455

STATEMENT NO. IV—*Receipts and Expenditure of*

No.	Station.	Budget allotment.	Receipts from sale of products.	Establishment.
1	2	3	4	5
		Rs.	Rs. A. P.	Rs. A. P.
1	Bhamo (Sinlumkaba)	1,935	168 10 0	1,196 3 2
2	Chin Hills (Falam)	1,250	356 10 3	540 0 0
3	Katha (Katha)	2,000	463 2 0	1,200 0 0
4	Myitkyina (Myitkyina and Sima)	2,060	324 11 6	770 1 0
5	Southern Shan States (Taunggyi)	4,255	851 13 0	2,827 2 2
6	Distribution of seeds, etc., from Headquarters	5,500	.....	.....
7	Distribution of Agricultural Implements from Headquarters ...	2,000	.....	.....
8	Sericulture (French silk-worm eggs)	3,000	.....	.....
	Total ...	22,000	2,164 14 9	6,533 6 4

G. B. C. P. O.—No. 47, D. of L. R. & A., 29-9-1905—324—T. J.

Survey Schools for the year 1904-05 (Paragraph 17).

Total income.	Expenditure					Number of pupils who passed the last examination in			Remarks.
	On establishment.	On scholarships.	On prizes.	On other contingencies.	Total.	Surveying.	Arithmetic.	Revenue law.	
8	9	10	11	12	13	14	15	16	17
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.				
271	1,104	465	28	440	2,037	15	10	1	
156	1,180	771	14	26	1,991	7	8	1	
580	1,142	491	34	368	2,035	20	4	3	
272	1,204	700	14	53	1,971	7	4	4	
280	1,243	852	24	493	2,612	11	6	9	
528	1,104	840	24	161	2,129	17	12	7	
519	1,128	1,016	24	470	2,638	12	13	10	
314	910	531	14	188	1,643	7	3	5	
574	1,138	414	26	271	1,849	3	5	...	
777	1,104	1,655	36	560	3,355	17	17	9	
48	1,104	1,364	34	221	2,723	14	17	4	
91	958	998	28	234	2,218	25	13	22	
207	1,118	690	30	110	1,948	2	4	6	
195	1,308	530	18	213	2,069	3	1	1	
465	1,104	814	36	354	2,308	19	13	11	
117	1,104	596	30	109	1,839	7	6	2	
120	972	1,154	36	105	2,267	13	7	14	
113	1,104	618	30	154	1,906	4	9	4	
5,627	20,029	14,499	480	4,530	39,538	203	152	113	
6,377	19,587	14,913	480	4,916	39,896	256	223	104	

Experimental cultivation during 1904-05 (Paragraph 20).

Expenditure.						Remarks.
Purchase of seeds.	Up-keep of garden.	Feed and keep of stock.	Miscellaneous contingencies.	Purchase of agricultural implements.	Total.	
6	7	8	9	10	11	
Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
...	157 0 0	2 4 0	5 1 0	...	1,360 8 2	
55 7 0	174 0 0	...	463 2 7	...	1,232 9 7	
50 9 0	347 0 0	...	169 12 0	2 0 0	1,769 5 0	
87 3 0	178 8 4	...	116 1 0	...	1,151 13 4	
...	202 3 0	30 0 0	403 4 11	32 8 0	3,495 2 1	
1,368 9 0	...	...	168 14 3	...	1,537 7 3	
...	...	...	...	...	.....	
...	...	...	...	...	.....	
1,561 12 0	1,058 11 4	32 4 0	1,326 3 9	34 8 0	10,546 13 5	

LAND RECORDS' ADMINISTRATION REPORT

FOR

THE YEAR ENDING 30TH JUNE 1906.

RANGOON:

OFFICE OF THE SUPERINTENDENT, GOVERNMENT PRINTING, BURMA

1906.

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LAND RECORDS ADMINISTRATION REPORT

FOR THE YEAR ENDING 30th JUNE 1906.

Prefatory.

The Department was in my charge during the entire year. The Deputy Director, Mr. J. MacKenna, M.A., I.C.S., proceeded on a year's leave from the 25th October 1905, and Mr. W. E. Lowry, B.A., I.C.S., officiated for him. Mr. MacKenna also acted as Registrar, Co-operative Credit Societies, in addition to his own duties, for a period of three-and-a-half months during the absence on leave of the permanent incumbent, Mr. H. F. P. Hall. The Assistant Director, Mr. J. C. Clancey, F.R.A.S., was at his post throughout the year.

During the year short leave was given to one Superintendent and long leave, on medical certificate, to three Superintendents. In several instances leave had to be refused owing to the paucity of officers, and is now practically closed except on grounds of illness. One Superintendent who was on long leave had to be recalled to duty. Transfers and re-transfers were numerous; these were unavoidable owing to the undermanned state of the Department. Practically every Probationer held district charge. In one instance a Myoôk with previous Land Records experience was placed in charge of a district for a short period. There was only one grade promotion in the year. Three Probationers were appointed to the Department, namely, Messrs. C. H. O'Hara, A. L. McCann and O. V. H. Thomas; Messrs. D. Carey and F. H. O'Donel were entertained towards the close of the year and are now under training. Maung Tha Do Pru, Superintendent of Land Records, retired from the service on an invalid pension and Mr. J. W. Adamson, Superintendent of Land Records, was transferred to the Provincial Civil Service, on probation.

On the breaking up of the Katha Special Survey Party, Maung Pe Maung, Superintendent of Land Records, was transferred to the charge of the Ma-ubin-Pyapôn Revision Survey Party. Maung San Shwe, Superintendent of Land Records, was placed in charge of the newly formed Revision Survey Party in the Pegu District.

SECTION I.

LAND RECORDS.

Demarcation preliminary to survey.

1. Advance demarcation was continued in the Minhla township of the Thayetmyo district where work was suspended last year owing to the unhealthiness of the tract. An area of 670 square miles was completed by two Demarcation Officers working for a period of five-and-a-half months from December. The cost of the operations amounted to Rs. 2,370. The West-Yoma portion of the township was left undemarcated as the country was mountainous and contained but little permanent cultivation. The total area demarcated in the past two years in the Sinbaungwè and Minhla townships, in the (old) Upper Burma section of Thayetmyo is 1,581 square miles.

In Akyab 50 square miles were demarcated by the local staff preliminary to survey by special agency in the same season in the Rathedaung and Na-af townships in the north of the district.

An area of 30 square miles in the unsettled tracts of the Hlègu and Kawa townships in the Pegu district was demarcated by the staff of the Special Survey Party in connection with surveys to be undertaken by it. This work was originally intended to be done by the local staff but they were unable to attend to it.

Survey by No. 7 Party, Survey of India Department.

2. The operations of the Party were again confined to the Pakôkku district in which the traverse survey of 554 square miles in the Pauk township and the detailed survey of 1,109 square miles in the Pakôkku, Seikpyu and Pauk townships were accomplished. The latter area included 61 square miles of river blocks.

The cost of the season's work amounted to Rs. 1,08,092. The mapping which remained over of the Rangoon Town Surveys executed in 1904-05 was also completed at a cost of Rs. 1,599. Traverse charts for the whole of Burma were prepared, the cost of which was Rs. 1,840. The total area intended for cadastral survey in the Pakôkku district has now been traversed, and amounts to 3,248 square miles inclusive of 231 square miles of the bed of the Irrawaddy river. Of this 2,488 square miles have been surveyed in detail, the balance of 529 square miles remaining for execution next season.

Revision-surveys.

3. The mapping and area work appertaining to the resurveys done by special staffs last year in Prome, Ma-ubin, Toungoo, Mergui, Mandalay and Katha was brought to a successful termination in the recess season. The office work was examined by the Assistant Director in the first three districts and by me in Ma-ubin, and found in all cases to be of a professional type ; the work in Ma-ubin was of particularly good quality. In Mandalay the recess work proved to be heavier than was anticipated, and the establishment had consequently to be kept on for an extra two months, at a cost of Rs. 860. The balance of the maps of the Minbu district which remained to be re-drawn from last year was completed and the sheets have been published in time for use with the Revision Settlement Party which is now at work in the district.

Revision surveys by special agency were executed during the year in the districts of Ma-ubin, Myaungmya, Pyapôn, Pegu, Amherst and Thatôn. The operations were conducted by special parties in charge of two Superintendents in the first four districts, and by the Local Superintendents of Land Records in the other two districts, and are described hereafter. Sanctions to the various undertakings were received for the most part late, and there was consequent difficulty in organizing the survey parties, but notwithstanding field-work, except for minor delays, was started with commendable promptitude throughout. Most of the theodolites in use, and a large number of the other surveying instruments, were supplied on loan to the different survey parties from the headquarters office.

The Ma-ubin-Pyapôn Revision Survey Party was placed in special charge of Maung Pe Maung, Superintendent of Land Records, and was engaged on the re-surveys preliminary to re-settlement of portions of the Ma-ubin and Kyaiklat townships of the Ma-ubin district which remained over from last year, and of the Bogalè, Pyapôn, and Dedayè townships of the Pyapôn district ; it also revised the survey of a part of Moulmeingyun township of the Myaungmya district, which fell within the revision settlement programme of the year. The field staff consisted of eight Inspectors, six Sub-surveyors, 65 Field-surveyors, six computors and draughtsmen and one clerk, besides 16 tracers who were entertained for three months to prepare numbered *kwin* traces, as maps were got ready, for the Revision Settlement Officer. The holding-marking was left to be done by the Settlement Party. Field-work was commenced early in December and was at first confined to the tracts of the Ma-ubin and Myaungmya districts in which the Settlement Party had to operate first and then proceeded with the re-surveys in the Pyapôn district, the greater portion of which is for re-settlement next year. The revisions of survey completed comprise an area of 774 square miles containing 330,850 acres of cultivation, and were executed mostly on sectional sheets, only about an eighth being done on old published sheets where the corrections required were of limited extent. The average size of the field was 0·59 acre. In the Ma-ubin township three large blocks with but little cultivation and that of an impermanent nature were excluded from the survey. Opportunity was taken to split up a number of the larger *kwins* into smaller ones of more convenient size, and several sub-traverses were measured. A large number of permanent survey-marks were relaid including those found imbedded in wrong positions, and numerous lines were run to trace old marks for the benefit of the detail surveyors. On finishing their own work the traverse staff were towards the end of the season put on to help the cadastral section on detail surveys. The progress of the surveys was slow at the commencement owing to the *kwins* being under water in most places and the crops still unreaped, but later on the work advanced rapidly and an excellent season's outturn was the result. Num-

bered *kwin* traces were duly forwarded to the Revision Settlement Officer for the Ma-ubin, Kyaiklat and Moulmeingyun townships in batches at short intervals about the middle of the season. A Probationer was attached to the Survey Party from January who helped materially in the prosecution of the work. Numerous check lines were run practically over all the survey sheets by the Superintendent, Probationer and the Inspectors, and the work is said to have been well done. In one *kwin* the survey was found to have been fudged and had to be entirely re-done. In cases where elaborate *partals* were not needed as, for instance, where the revisions were effected on the printed sheets, a large proportion of the fields were gone over map in hand and errors corrected where met with. The assistance rendered by the village headmen and cultivators was as usual of the slightest, and *dani* gardens were in almost all cases undemarcated which necessitated much line-cutting by the surveyors themselves with their limited staff. The health of the party was on the whole good, the total casualties being one surveyor and three chainmen; sickness was most prevalent in the later months due in great measure to the difficulty in obtaining good potable water. The Assistant Director thoroughly inspected the field-work and found it to be of very good quality; in some cases the survey in sectional sheets would have been preferable to that on published sheets, and *vice versâ*, according as the corrections required were numerous or otherwise, but, on the whole, proper precautions had been taken to avoid unnecessary re-surveys. The Superintendent gave the work his close attention and deserves great credit for his management of the survey which has been accomplished with conspicuous success. The cost of the operations amounts to Rs. 71,234. Notwithstanding the efforts of the Party it was not possible to complete the whole of the re-surveys in the Dedaye township, where there is a balance of 11,552 acres of cultivation still for resurvey, and also another 7,216 acres which the local staff were unable to finish out of the programme that had been assigned to them. There is thus a cultivated area of 18,768 acres the re-survey of which must be undertaken early next season in order that the Revision Settlement Party which will be operating in the district next year may be provided with the requisite traces of *kwin* maps for its work. The survey will have to be done by a small special staff as the local surveyors will be busy with their annual assessments till the middle of February, and will, therefore, be unable to take any part in the work. As the Ma-ubin-Pyapôn Revision Survey Party is, however, to be abolished at the close of the present recess-season, it has been proposed to make the work yet to be done over to the Pegu Revision Survey Party which will require to be slightly strengthened.

The further information called for in connection with the proposed re-surveys in the Pegu district, which was referred to in last year's report, was duly obtained; it entailed laborious statistical compilation. The subject was fully investigated and sanction received to the undertaking none too soon; but fortunately complete preliminary arrangements in anticipation of sanction were made and work could be started immediately on receipt of sanction. The revised proposals regarding areas for re-survey were based on the latest data after careful scrutiny. They provided for the re-survey by a special staff in two years' time of 201,908 acres of cultivation. The necessity for revision was due almost entirely to the fact that extensions of cultivation had been so rapid that it was not possible for the local staff to keep the maps up to date. It is not at all certain that it would have been advisable to entertain a large local staff before it was certain that the *kwins* were ripe for survey. The proposed method of dealing with the question by a special staff was, moreover, much more satisfactory, and much more economical than a permanent addition to the district staff. It may be noted generally that these revision survey proposals involve rather the first detail survey of extensions than a revision of detail surveys formerly made, and that such proposals are ordinarily required in districts where the extensions of cultivation have been of great magnitude. The supply of correct detailed maps is absolutely necessary for the efficient carrying on of the Land Records work of the district, and nothing was proposed for survey which was not ripe for it. The changes in the *kazins* in the old maps were due to floods: but the new *kazins* were now sufficiently permanent to justify survey. Besides the area for revision there were about 22 square miles containing large blocks of cultivation, estimated at 7,241 acres, for original

survey in the Paunglin and Tandawgyi tracts in the unsettled area. Immediately on receipt of the orders the local officers made the necessary final arrangements for the organization of the party which was got together with considerable difficulty owing to the near approach of the field-season and of the consequent limited area for selection of qualified men for the work. With praiseworthy energy the Superintendent of Land Records (Mr. Beechey) succeeded in forming the party and arranging for its general wants. He assisted also in the subsequent arrangements when Maung San Shwe, Superintendent of Land Records, took charge of the party early in November. Most of the chainmen had to be recruited from India, while the surveyors were recruited from all parts of the province. The staff consisted of five inspectors, three sub-surveyors, 32 field-surveyors, three computors and draughtsmen (increased afterwards to six) and one clerk. Field-work was commenced on the 4th December and closed on the 26th May, and was confined to the Pegu subdivision. The total area surveyed was 243 square miles of which 136,823 acres were under cultivation. The average size of the field was 0·49 acre. The cost of the work amounts to Rs. 44,492. All sheets were *partalled* by the Superintendent or the Inspectors except a few in which there was little or no cultivation. As a precautionary measure the Superintendent went over a number of the Inspectors' *partal* lines which were found in order. The Sub-surveyors were employed in searching for permanent survey-marks and in putting down new theodolite stations where needed; owing to several of the old marks being found out of position a great deal of retraversing had to be done. In addition, this section traversed 18 new *kwins* in Paunggyi and 12 Pinlèdein *kwins* of Yitkangyi in the unsettled tract. The area newly traversed was 31 square miles. Some large and unwieldy *kwins* were also subdivided by sub-traverses taken as much as possible along natural boundaries. The holding-marking was done by the Burman surveyors and some of the Inspectors. Traces of the *kwin* maps were prepared and the survey plots numbered thereon and the areas of holdings worked out. A satisfactory feature was the attaching of a dozen apprentice surveyors of the district to the Revision Survey office for a practical training in field-work. Three members of the party died, *viz.*, a field-surveyor, a draughtsman and a chainman; otherwise the health of the staff was good. The field-surveyors are said to have worked well as a class. Credit is due to Mr. Beechey, the local Superintendent of Land Records, for initiating a complete and well-planned scheme of revision surveys and for the thoroughness of the preliminary arrangements, and to Maung San Shwe, the Superintendent in charge of the party, for the satisfactory manner in which the operations were carried out. The experience of the field-season has shown that owing to enormous expansions of cultivation during 1904-06 the original estimates have been much exceeded and allowance must be made for further extension next season. Besides, additional *kwins* in which cultivation since original survey has increased by 44 per cent. are reported as ripe for survey and must be added to the programme of the party. The area of cultivation now estimated to require re-survey next year amounts to 181,872 acres. In addition there are 7,404 acres for original cadastral survey (namely, 5,570 acres in Paunggyi most of which has been traversed in advance and 1,834 acres in Tandawgyi which has yet to be traversed). The re-traversing required will be 223 square miles, and new traverses will amount to 22 square miles. The Survey Party did much more in the season than was estimated for and the surveys too have been well done. As the area for next year has been considerably increased it is beyond the capabilities of the Party at its present strength to finish the work in a single season, and as it is important that the entire area should be completed in the coming year the staff will require to be augmented. It is proposed to do this by bringing over the small staff that will be employed in the early part of next field-season in Pyapôn as soon as the work there is finished and getting them to assist in the work in Pegu. It has been suggested that Maung Pe Maung should be put in charge of the Pegu-Pyapôn Party setting free Maung San Shwe for duty in the regular district Land Records work for which officers are badly needed.

The programme of Revision Surveys in the Amherst and Thatôn districts in anticipation of re-settlement mentioned in the report of last year received the approbation of Government, but owing to the late receipt of sanctions the requisite

staffs were organized with some difficulty. The tracts for revision survey by special agency in the year were situated in the Mudôn and Chaungzôn townships of Amherst and in the Bilin and Kyaikto townships of Thatôn; but before orders were passed in respect to the area in the Kyaikto township it was decided that the land which was subject to constant erosions by the sea in the north-west of the township should be specially visited and reported on to determine what area should be excluded from survey along the Sittang river. The Deputy Director accordingly visited the locality about the middle of the dry-season and after consultation with the local Public Works Engineer and the Superintendent of Land Records reported that an area of 1,468 acres had been washed away and that 11,687 acres were insecure. The area for survey was thus reduced to the extent of the revisions contemplated in this block, though the Settlement Party will in the ordinary course deal with so much of it as still remains when the party operates in the tract next year. In Amherst the surveys were to be confined in the year to revisions, but in Thatôn some new areas in the unsettled tract were also to be taken up in survey. The holding-marking in both districts was to be left to the Revision Settlement Party which was to follow soon after, but numbered *kwin* traces were to be prepared for the Revision Settlement Officer. The re-surveys required were due to the ordinary extensions of cultivation and in places to sea inundations; they were undertaken only in those *kwins* in which cadastral details had undergone considerable changes. The survey staff for the work in the Amherst district consisted of two Inspectors, two sub-surveyors, 10 field-surveyors, four computors and draughtsmen and one clerk, who were for the most part recruited locally. Field-work lasted for the whole period of six months from December to May. Progress was necessarily slow at first, but improved later when the staff became more accustomed to their duties. The total area re-surveyed was 59 square miles comprising 34,396 acres of cultivation, including gardens which are fairly numerous in the tract dealt with. The outturn, though in excess of the estimate, is somewhat below that ordinarily obtained in cadastral operations, and is due to the work being more or less of a patch-work nature and also scattered, as well as to the desertion of locally engaged chainmen in the height of the working season and the difficulty experienced in readily replacing them. If a repetition of the difficulty is anticipated next year it would be advisable to recruit a large proportion of the men from India instead of depending solely upon the local supply. It is a question whether where the revisions in a *kwin* are heavy it is not worth while to survey the whole *kwin* instead of parts only; there is a saving of time and labour by this method, and the attention of the Superintendent was drawn to the point and instructions given for the re-surveying of areas on new plots instead of old plots where the aforesaid conditions prevailed. The programme of the year was practically finished except for four *kwins* containing 1,143 acres of cultivation which, as the area is small, may be left to the local staff to survey as early next season as their regular duties will permit. Three large *kwins* were split up into smaller ones; in addition, the sub-surveyors completely retraversed 13 *kwins* and ran 22 sub-traverses, besides attending to the work of picking up old survey marks for the detail survey where required. The traverse section did not work altogether satisfactorily; the material was poor, and their work had often to be re-done by the Inspectors owing to its inferiority. The Superintendent and Inspectors ran numerous test lines over the cadastral sheets and the work is reported to have been generally of excellent quality and the inspections sufficient. In only three cases it is said had work to be re-done, two of these being in respect to garden *kwins*, due to carelessness. The Assistant Director inspected the field-work in the Mudôn township where the bulk of the year's revisions lay, and found the surveys of the paddy areas decidedly good and those of gardens fair. The local Superintendent of Land Records (Mr. D'Souza) worked energetically, notwithstanding many other demands on his time, and succeeded in accomplishing the survey of the year under trying conditions. The cost of the year's operations come to Rs. 14,465.

In the Thatôn district a special staff of two Inspectors, two sub-surveyors, 12 field-surveyors, four computors and draftsmen and one clerk, working for six months from December to May, accomplished the survey of 75 square miles, of

which 35,115 acres are under paddy and 1,632 acres are gardens. The area completed comprised both revision and original surveys. The number of *kwins* traversed was 38; the field-surveyors surveyed 24 *kwins* wholly and 34 *kwins* in part of old work, and 48 new *kwins* of which ten were not traversed at all and which must thus have been mapped on the triangulation system. The work was checked by the Superintendent and Inspectors and is stated to have been correct, except for one *kwin* which had to be re-surveyed nearly in full. The cost of the work was Rs. 17,849. The district report is so extremely meagre that many desirable particulars of the work done are not forthcoming. The detail surveys were checked by the Assistant Director in the Bilin township and were on the whole of good quality. The traverse work was at the time progressing satisfactorily. The cadastral survey of revision and new areas was being got on with simultaneously instead of time being given for the previous completion of traverse plots in the latter case. The staff was got together with no little difficulty owing to the late receipt of the sanction. The surveyors were mostly new to the work and had to be instructed in their duties. The survey was somewhat slow at first owing to the newness of the men and the time generally lost at the start in getting to the ground and searching for stations, etc. Actual field-work did not commence till the 7th December. The outturn of the season is rather small, and it is feared that the year's programme was not completed; but the district report is silent on the subject. The local Superintendent of Land Records (Mr. Ford) worked hard, but he also had his hands full of other surveys in addition to the ordinary supplementary survey; he was moreover in indifferent health and is now reported to be seriously ill.

The annual re-survey of impermanent island cultivation, for assessment purposes, was as usual done by special surveyors in the districts of Mandalay, Sagaing, Lower Chindwin and Myingyan. The work was throughout well checked by the respective inspecting Land Records Staffs. In Mandalay six surveyors were at work for six months and surveyed 11,833 acres in island *kwins* and about 2,000 acres of extensions and changes in the Mandalay Canal tract; they also re-surveyed three *kwins* on a professional basis in the Patheingyi township which required re-survey badly on account of the expansion of cultivation and the vast topographical changes brought about by the canal system; the cost of the work was Rs. 1,485. In Sagaing six surveyors worked four months and completed the survey of 15,341 acres at a cost of Rs. 826. In Lower Chindwin two surveyors in two months' time surveyed 3,707 acres of which 2,239 acres were cultivated; the cost was Rs. 200. In Myingyan ten surveyors were emyloyed for six months and finished the survey of 19,631 acres of which 15,722 acres were assessed; the cost amounted to Rs. 1,452.

The attention of the local authorities was drawn to the fact that the term of settlement for the tract re-settled during 1897-98 in the Kungyangôn, Kyauktan, Thôngwa and Thabyegan townships, of the Hanthawaddy district, expires in 1910, and enquiry made as to whether any revisions of survey preliminary to the next revision of settlement were necessary, and, if so, as to how and when it was proposed to bring up the 16-inch maps to date in order that correct maps might be forthcoming in proper time for the Revision Settlement Officer's requirements. As the present Ma-ubin-Myaungmya-Pyapôn Revision Settlement Party, according to its programme of work, is to operate in the Hanthawaddy district in the year 1907-08, it is imperative that such re-surveys as may be required in the tract for the purposes of the settlement should be undertaken in 1906-07. A detailed statement of areas showing the extent of revision surveys contemplated, along with establishment proposals, was accordingly submitted and considered. The number of *kwins*, out of a total of 360 *kwins* for re-settlement, intended for re-survey was given at 41 in which the area under cultivation at the original survey was 29,271 acres and now stands at 78,921 acres. The extensions since survey thus represent 170 per cent. of the former area and there have besides been considerable changes in field boundaries as the cultivation was new at the time of the original survey. Although extensions and changes have been surveyed up from time to time, the alterations in the maps hvae been so great that a fresh Mathematical Survey is necessary in order that the settlement party may have up-to-date maps to work with.

The total area which needs re-survey amounts to 42,260 acres under cultivation, for *kwins* to be mapped either wholly or in part. The local staff will be fully occupied with their ordinary duties and they will also attend to the minor revisions of survey where required in the other portions of their charges. But the greater portion of the necessary revision survey must be undertaken by a special staff which will work under the orders of the District Superintendent of Land Records. The total estimated cost amounts to Rs. 17,726, and sanction to the inception of the work has been applied for.

Special Surveys.

4. The recess work relating to the special surveys executed last year by a special party in Katha and by local parties in Tavoy and Mergui was duly completed in the recess months. I inspected the map and area work in Tavoy and found the maps in particular neatly prepared. Traces of *kwin* maps were also made for the following season's supplementary survey work, as published sheets from the Government Press would probably arrive too late for the year's requirements. The work of the Katha district terminated at the end of October, and the party was then broken up, and most of the hands found suitable employment in the various other revision and special parties that were at work in the year. The Superintendent (Maung Pe Maung) of the party on the close of the Katha work was transferred to the charge of the Ma-ubin-Pyapôn Revision Survey Party.

The only special survey by local agency conducted in the year was that in connection with a scheme for raising the rates on land in the unsettled tracts of the Akyab district, reference to which was made in last year's report. The proposals for the cadastral survey in four seasons of about 170 square miles containing approximately 55,000 acres of cultivation outside of the supplementary survey tract, at an estimated cost of Rs. 44,583 by a small special establishment under the supervision of the local Superintendent of Land Records, were accepted by Government, and work was commenced in the year in the three Kalapanzin and Myothit Circles in the north-west of the district. Blocks of not less than 100 acres of cultivation which were considered to be worth surveying were alone to be taken up in survey. Owing to the late receipt of sanction there was considerable difficulty in engaging the staff and starting the work in proper time. As it was the traverse work could not be begun till towards the end of November though the detail survey commenced early in December. The staff employed was one Inspector, two sub-surveyors, six field surveyors, two computors and draughtsmen and one clerk. The material was raw and had to be moulded into shape before good results were obtained. Owing to the numerous surveys of all kinds in progress in the year competent hands were hard to secure. The advance *kwin* demarcation was done by the local surveyors. The traverse survey made but slow progress at the start and even later on it was much hampered by sickness among the staff; it even became necessary for the Inspector to help in the theodolite work and also for the sub-surveyor engaged for the Chittagong-Akyab boundary survey, and theSuperintendent too, to observe for azimuth at some stations for the angular verifications. In consequence of these drawbacks and the late arrival from India of the old traverse data of the main circuits with which the new work was to be connected, in most cases the field-surveyors preceded the sub-surveyors as the advance traverse plots could not be provided in time for the detail work which had consequently to be executed largely on the triangulation system. In all 25 *kwins* were traversed with an area of 31 square miles. What remains over of the first year's programme will be taken up in traverse in the ensuing season along with the work of the second year's programme. The total area cadastrally surveyed in 30 *kwins* amounted to 28 square miles of which 12,483 acres are cultivated. *Partal* lines were taken over the sheets of every *kwin* without exception by the Superintendent and the Inspector, and the checks were made as effective as possible. The quality of the work is said to be good, though the area completed is short of the estimate. The Assistant Director inspected the field-work and found it to have been carefully done, though slow. He took the opportunity of instructing the Superintendent and staff in their work, in particular as to proper geographical fixings. The holding-marking was done by the surveyors. The recess work is now in progress, and the recopying on regular traverse plots of the sheets surveyed on the triangulation system is in hand.

The cost of the operations amounted to Rs. 10,998. Considering the scattered and comparatively difficult nature of the work, the prevalence of sickness among the establishment, the lateness of the sanction and consequent difficulty in obtaining suitable workers at the last moment, and other contributory causes, the cost is not excessive though high; but in future seasons, under more favourable conditions, the expenditure should work out proportionately less with the larger outturn of work secured. The Superintendent (Mr. Körper) devoted much time and thought to the survey and encouraged his staff to do their best to make the survey, under exceptional difficulties, a success. He had very heavy duties to perform in connection with the demarcation and survey of the Chittagong frontier and also other surveys, and has not spared himself in the work though frequently laid up with malarial fever brought on from exposure.

In last year's report reference was made to certain proposed surveys by special staffs of cultivated blocks outside of the settled tracts in the Kyaukpyu and Sandoway districts. In regard to Kyaukpyu the proposals for the cadastral survey of about 60 square miles containing some 18,000 acres of cultivation were accepted by Government, and arrangements have accordingly been made for undertaking the work by a special staff in two years commencing next season at a total estimated cost of Rs. 18,222. In respect to the proposals for the survey of 14 *kwins* in all situated in the Taungup, Sandoway and Gwa townships of the Sandoway district, I did not consider the survey of sufficient importance or urgency to warrant special action at the time. Now, however, I am satisfied that although the ordinary supplementary survey of the district is comparatively light the local staff is unable to undertake the requisite traverse work, but that they should do the detail surveys subsequent to the traversing by a small special staff. Recommendations have therefore been made for the necessary budget provision in 1907-08 of Rs. 1,307. The total area estimated for survey is 14 square miles containing about 3,300 acres of cultivation.

In accordance with the decision that the tracts proposed for original cadastral survey in the Tharrawaddy District should be gone over by responsible officers before definite steps in the matter of survey were taken, as described in the report of last year, the Assistant Director visited the tract in the open season in company with the District Superintendent of Land Records, and made a thorough examination of the proposals on the ground. The main tract is situated on the west of the district along the Irrawaddy and Myitmaka chaungs. Blocks comprising an area of 406 square miles and containing approximately about 31,000 acres of cultivation were proposed for survey by the Survey of India. The remaining block consisted of well cultivated bits, in small detached *kwins* bordering on the older surveys, the survey of which could be undertaken by local agency and could be done readily in two years by a small staff working under the local Superintendent of Land Records. The total area was 72 square miles containing with further possible extensions about 25,000 acres or more of cultivation. The demarcation would have to be done by the local staff, and the estimated cost of the work was put at Rs. 22,612 for the two years. In forwarding the report I said that the area proposed for survey by local agency might be surveyed, as the land was highly cultivated and of a permanent character. But as regards the area proposed for survey by the Survey of India, I considered that the cultivation was too limited and the land too flooded to be fit for cadastral survey at present. Moreover, No. 7 Party had a good deal of work on hand yet, and the question whether it should survey in Tharrawaddy might well be deferred. These views were accepted and establishment proposals were under orders framed for the work to be done by local agency and submitted for sanction. Orders have just been received sanctioning the proposals and the work will be done in the ensuing season.

Town and Fishery surveys.

5. Special establishments were employed on the demarcation and survey of fisheries in the Ma-ubin and Pyapôn districts and of town lands practically throughout the province. These operations are in charge of the Secretary to the Financial Commissioner, but it is intended to transfer the work to this department which will also be charged with the up-keep of the maps and the connected Town Lands rolls. The

Assistant Director has helped in the present year's work and inspected the surveys, as opportunities offered, in several districts.

Potta surveys.

6. With a view to putting an end to land jobbery, *bonâ-fide* cultivators are now encouraged in most places to enter upon waste land and clear it for cultivation without let or hindrance, extensions being surveyed up and assessed in the ordinary way by the local surveyors, and in several districts the issue of grants has been abolished or suspended. The survey and issue of grants is thus steadily decreasing, and will probably before long disappear altogether under the new system. In Pyapôn and Toungoo the establishments employed for the survey of *pottas* were on regular pay; elsewhere payment was made on the piece-work system. The total number of cases dealt with was 6,012, the area surveyed comprised 49,114 acres, and the cost of the operations amounted to Rs. 23,317. The largest issues of grants were in Toungoo, Bassein, Amherst and Myaungmya. The staff engaged in the work consisted in all of 12 Inspectors and 84 surveyors working for periods varying from 3 to 7 months. The fees realized amounted to Rs. 31,167, at As. 8 per acre, except in Thayetmyo where the rate levied was As. 4. In all cases the fees covered the cost of the survey and in some exceeded it; excess payments were refunded to applicants where no surveys were made. In Mandalay owing to the constant change in surveyors a portion of the survey fees lapsed to Government as the men could not be found when the time for payment arrived. The demarcation is said to have been defective in Henzada, otherwise it is reported as good. Superintendents of Land Records checked the surveys wherever they could, as did also the local Inspectors where there were no special Inspectors. The grant Inspectors did their share of inspections, and the surveys are pronounced on the whole to have been of good quality. In Tavoy, however, the Commissioner came across several cases where the maps overlapped. Great delays occurred in the submission of maps in Bassein, Thatôn and Tavoy, but in other centres maps were generally punctually received. Special *potta* Myoôks were appointed for the disposal of grant cases in Toungoo alone; in the other districts this work was performed for the most part by the Township Officers. In Pegu in consequence of the suspension of the issue of *pottas* for two years no grant surveys were undertaken. In Pyapôn 18 cases were received too late in the season for survey before the break of the rains. There has been a marked decline in the number of applications for grants in this district due chiefly to the more stringent application of the rules and the consequent rejection of bogus applications; in the year about one-third of the total applications were thrown out. In Bassein the issues of grants were limited in number owing to the non-receipt of maps in proper time. In Henzada many applications were dismissed for want of the necessary demarcation on the ground. In Toungoo 1,307 *potta* cases were left pending from last season and 748 were received in the year, but only 1,542 cases were disposed of owing to the late receipt of sanctions; the balance will have to be carried over to next year when special *potta* Myoôks will again be required to deal with both old and new cases. There was much delay in the disposal of cases in Thatôn, partly due to ignorance of procedure on the part of the Township Officers and partly to the delay in the submission of maps and reports by surveyors. In Amherst a large number of *potta* cases were left undisposed of chiefly in the Mudôn and Kyaikmaraw townships; with the opening of the Pegu-Martaban railway it is anticipated that there will be an increased demand for *pottas* in this district, and special *potta* Myoôks may therefore be needed here too.

Area under and cost of Supplementary Survey, Statement I.

7. The total area under Supplementary Survey was 43,652 square miles, or a net increase over last year of 815 square miles. The increases are distributed as follows: Palê and Kani townships of the Lower Chindwin district, settled in 1903, 544 square miles; Katha, 161 square miles; Tavoy, 34 square miles; Mergui, 11 square miles, surveyed by local agency; Kyaukpyu, 75 square miles surveyed by the Survey of India; and two square miles in Kyauksè which were newly surveyed by the local staff. On the other hand there was a decrease of 12 square miles owing to erosion by the sea in the Thatôn District; this gradual diminution in the area of the district has been in progress for some years and is

likely to continue unless some abnormal changes occur to arrest it. The area of the Shwebo district has not been included in the provincial area as yet, as practically the whole of the Supplementary Survey Staff was employed till April on the preparation of settlement registers and in bringing the maps up to date for the requirements of the Settlement Party; but now that the Settlement Officer has left the district the supplementary survey work has been commenced in the Shwebo Canal tract and will be extended to the whole of the district before long. The areas of Rangoon and Mandalay town are also excluded from the total area, as the work in them is of a special kind. The total assessment of the year amounts to Rs. 2,49,47,517 which represents an increase of Rs. 9,62,402 as compared with last year. Hanthawaddy is responsible for the heaviest increase due to extensions and the falling in of grants, and next in importance and from the same causes are Pegu, Prome, Toungoo, Pyapôn, Tharrawaddy, Thatôn and Amherst. Besides the increase from the ordinary expansion of cultivation there is a considerable increase in revenue in Myaungmya owing to the introduction of enhanced rates into the resettled tract of 1903-04, and in smaller measure in Kyaukpyu, Katha and Tavoy in consequence of the new surveyed tracts being brought under supplementary survey, in Akyab on account of the application of the revised settlement rates in the circles of Ngasainggyi, Palaungbyin and Pyunshe, and in Yamèthin and Meiktila owing to a more favourable season; and, finally, because of the whole of the cultivated area in the Magwe District being assessed at Settlement rates and shown in the statement for the first time. The principal decreases occurred in Henzada, Ma-ubin and Mandalay due to more fallow owing to floods, in Myingyan and Minbu owing chiefly to cattle-disease and in Lower Chindwin, Sagaing and Kyauksè owing to an indifferent season.

The total cost on account of supervision was Rs. 3,99,419 and of survey Rs. 6,72,448; in all, Rs. 10,71,867. This was in excess of the corresponding expenditure last year by Rs. 52,427, and is attributable mainly to the increase in establishments for the extended areas brought under supplementary survey in the year, and also to the strengthening of district establishments needing it owing to increased work resulting from an expansion of cultivation and other causes. The cost rate per square mile was Rs. 24·55, and per acre of the assessed area As. 1·243, or a slight increase in both cases over the previous year's figures. The cost was greater in Pegu owing to the appointment of two more Inspectors and a probationer and extra surveyors; in Myaungmya to the appointment of an extra inspector, an additional clerk and some surveyors; in Kyaukpyu, Pyapôn, Amherst and the Lower Chindwin to an increase in surveyors; in Sagaing and Kyauksè to the posting to the district of senior Superintendents; while in the Upper Chindwin the enhancement in cost was considerable and is due to placing the district in independent charge of a probationer and the formation of a separate office involving a heavy initial expenditure. Marked decreases in cost rates occurred in Tavoy, Minbu and Ma-ubin owing to the appointment to the districts of junior Superintendents, and also to the extension of the supplementary survey tracts in Tavoy and Katha. The cost rates are very high in the Sandoway, Tavoy, Upper Chindwin, Mandalay and Kyauksè districts because of the restricted area under supplementary survey. In sympathy with the variations in the cost rate per square mile, the cost per cent. of the assessment shows marked increases in the Lower and Upper Chindwin and Sagaing, and a marked decrease in Tavoy; there was also a considerable increase in Myingyan owing to a shortage in the cropped area due to cattle-disease and an unfavourable rainfall, and a similar decrease in Kyaukpyu owing to the added area and in Yamèthin owing to a favourable season.

Submission of assessment-rolls.

8. The assessment-rolls were submitted late in eleven Lower Burma districts, the latest date being 12 days after the proper time in Mergui. The reason for the increased delay in the submission of the assessment-rolls is to be found in the number of remission cases resulting from heavy floods.

In Upper Burma the whole of the rolls for the year were submitted punctually in Minbu and Myingyan only. The most serious delays were in Magwe where a large increase of establishment has now been sanctioned. In one circle of the Lower Chindwin where the *kaing* survey work is very heavy the rolls were a month

late. An increase of establishment has been sanctioned in Katha also where the *kaukgyi* rolls were not received in full until a week after the due date. In the Upper Chindwin although there was a marked improvement on last year the last of the *kaukgyi* rolls were not submitted till more than two months after time owing partly to last year's arrears of work and partly to slackness on the part of the revenue surveyors of which due notice was taken.

Offices and Record-rooms.

9. The Register of transfers and changes (Register IX L. B. : Register VIII U. B.) is said to have been maintained more successfully than in previous years, but there is still considerable difficulty in inducing the people to come forward and make reports. In several districts fines were inflicted for failure to report. In Myaungmya a complaint is made of the dilatoriness of the Courts in reporting transfers made by order of the Court. Revenue Surveyors and circle thugyis' offices continue to be kept in good order and are properly inspected by Superintendents and Inspectors. It is, however, pointed out that the Revenue Surveyors are unable to provide the same sort of substantial houses as the wealthy circle thugyis and the Deputy Commissioner, Akyab, reports that although there is a marked improvement in the condition of the offices the accommodation is still very limited. The Deputy Commissioner, Kyauksè, points out that Revenue Surveyors' houses are cheap and therefore very inflammable and the Deputy Commissioner, Yamèthin, suggests a small house allowance for Revenue Surveyors in towns where rent is high.

In Sandoway one Revenue Surveyor's office was burnt down but all the records and Government property were saved. In Pegu an office was burnt but all the records were saved except one volume. There is a very marked general improvement in the condition of the offices of both Revenue Surveyors and Inspectors in this district owing to the efforts of the Superintendent. Two offices were burnt in Tharrawaddy. In Ma-ubin one Revenue Surveyor saved all Government property and records, but lost most of his private belongings in a fire suspected to be incendiary. In Bassein the office of the Kyônpyaw Inspector was destroyed. Three offices were burnt in Henzada and in one case some of the records were lost. In Minbu one office was burnt and in Magwe two, in one of which the records for two years were destroyed. In Kyauksè one office was completely burnt out and all the records, furniture, and instruments lost.

In Mergui one Revenue Surveyor was reduced to apprentice surveyor on account of the disgraceful state in which the Superintendent found his office. In Sagaing several Inspectors have been warned about the inadequacy of their inspections of Revenue Surveyors' Offices. In Meiktila Revenue Surveyors have no offices in their charges, but assemble in the district or township headquarters to prepare the various annual statements. In Myingyan two surveyors were fined for damage to or loss of records and two offices were burnt down and records and other Government property destroyed. Several surveyors' offices were found unsuitable and the Deputy Commissioner is being addressed on the subject.

In Akyab the new record-room was moved into on July 7th, and the records are now being re-arranged according to the District Office Manual. In Kyaukpyu the records were moved into the new record-room on June 4th, but racks are reported to be insufficient and the Public Works Department has been approached on the subject.

In Pegu and Sandoway records have been re-arranged in consequence of the splitting up of circles into Revenue Surveyors' charges. The Record-room at Ma-ubin was visited by the Commissioner and a re-arrangement is being carried out under his orders. The Pyapôn records have been removed from Ma-ubin but the record-room has not yet been properly fitted with racks, etc., and temporary arrangements have been made to meet present requirements. In Bassein the newly supplied maps have not yet been arranged owing to pressure of work on the Record-keeper. In Toungoo a number of old correspondence files going back for more than 30 years have been gone through and destroyed by the Superintendent, Land Records. In Amherst pigeon holes for map tins have not yet been fitted into the Record-room and the Public Works Department has been addressed on the matter, but the Commissioner considers that an entirely new record-room for all the Courts and Offices at Headquarters will have to be built. In Tavoy there seems to have been some misunderstanding about the plan of the racks in the record-room

which is now being remedied. When this has been done the maps and records will be re-arranged. Extra shelves are being placed in the record-room at Mergui and afterwards the maps will be re-distributed in their tubes which are now very much overcrowded. In Magwe additional shelves are being placed in the racks and at Sagaing a new record-room is beginning to be built.

In Kindat the records have not yet been removed to the District Headquarters and the Commissioner considers that so long as Land Records work is confined to Mingin township the records should remain there.

The Director, Deputy Director and Assistant Director inspected headquarters offices and record-rooms in 29 districts.

Maintenance of the survey.

10. In Akyab two small *kwins* with a total area of 198 acres and 2,911 acres of grant land were resurveyed by the local staff. Orders are still awaited with regard to a special staff that has been asked for. In Hanthawaddy 11 *kwins* aggregating 4,800 acres and 4,479 acres of *pottas* were surveyed by local agency and the work on being checked by the Superintendent and the Inspectors was found to be good.

In Pegu the area surveyed by the local staff during the year amounted to 24,119 acres, but the Inspectors reported that many of the surveyors shirked the work and many had a very meagre knowledge of the work. Steps have, however, been taken to train pupils in Survey Schools throughout the province to survey large blocks and more stringent rules have been drawn up for the examination of apprentice surveyors.

In Tharrawaddy 16,216 acres were resurveyed by the local staff and in Prome 14,463 acres of cultivation. In Ma-ubin the local staff report that 21 *kwins* in Danubyu and 10 *kwins* in Yandoon covering a total area of 90 square miles are in need of a second revision. This is corroborated so far as Yandoon is concerned by the Superintendent after a personal visit. In Danubyu he saw only two of the *kwins* proposed for a second resurvey but reports very well of the work in the township as a whole. In Pyapôn the local staff resurveyed 9,809 acres of cultivation and revised 4,327 acres more. In Bassein 15 *kwins* were surveyed in full and nine in part and it is expected that all the survey required will be completed without extra establishment within the next five years. No inspection of this work was, however, undertaken by the Inspectors on account of press of work in connection with grants. The newly surveyed *kwin* maps should be thoroughly checked by the Superintendent and Inspectors before being sent for reproduction by the Press.

In Henzada 5,195 acres were resurveyed by local agency. In Myaungmya 21,591 acres containing 16,689 acres under cultivation were surveyed by the local staff and a scheme has been drawn up for systematically bringing the survey up to date.

In Toungoo 15,220 acres of extensions and 7,091 acres of old cultivation were surveyed by the Revenue Surveyors. The large extensions in Pegu, Ôktwin, Tantabin and Kyaukgyi townships mentioned last year still continue.

In Thatôn the regular staff revised 24,315 acres and surveyed 4,379 acres of grant land. In Amherst the local staff surveyed 11,458 acres but some of the surveyors were found to be incompetent to do large surveys. The Commissioner warmly commends Mr. DeSouza for his work in this connection.

In Magwe new surveys were made of 9,022 acres and 8,885 acres were resurveyed. In Mandalay some 9,000 acres were disposed of by the local staff and 325 acres outside the limits of Supplementary Survey. In Katha 1,037 acres of extensions were surveyed and in Shwebo maps were brought up to date in 484 *kwins*. In Sagaing 9,672 acres in the flooded tracts are said to require resurvey on account of annual floods. These will be visited if possible during the field season to ascertain whether a holding survey will be sufficient.

In Kyauksè 30,547 acres require resurvey owing to the remodelling of the canals, but the *kazins* are not yet permanent and the work cannot therefore be taken in hand at once.

Preservation of permanent survey marks.

11. In Akyab the Revenue Surveyors visited 4,466 marks and found only 742 lost or broken whilst out of the 1,624 marks visited by the Inspectors, no less than 773 were found lost or broken. Explanations are being asked for. In

Pegu despite the fact that every survey mark in the district was visited by the Revenue Surveyor and the village headman concerned, out of the 5,769 marks visited this year only 1,715 were found protected and no less than 3,544 were missing. A number of thugyis failed to send in their annual reports, and many more were very late, whilst the fact that they returned 62½ per cent. of the marks as missing suggests that the search was very perfunctory. It would seem time to take somewhat drastic measures against the worst offenders. There were 488 replacements during the year and a number of new marks were laid down by the Revision Survey party. In Tharrawaddy nearly 95 per cent. of the marks were found protected, a fact most creditable to all concerned. The Deputy Commissioner, Bassein, reports that all pipes have been protected and broken and missing ones replaced which is most creditable to the Land Records staff. In Henzada 2,587 broken and missing pipes were replaced out of 3,096. Myaungmya, specially noted last year for the high percentage of unprotected marks, now returns no less than 88 per cent. protected: 788 out of 805 broken pipes were replaced and 461 new pipes put down out of 535 missing, a very notable improvement. In Toungoo an improvement is said to have taken place after the punishment of two Village Headmen for neglect. In Thatôn there is a growing tendency to protect pipes once for all with mounds of stone. In Amherst there is a decrease in the number of pipes visited owing to the staff being engaged on revision surveys: few replacements have been made as the surveyors are finding that previous replacements are sometimes as much as 80 links out of position. There is, however, absolutely no reason why every broken pipe should not be replaced by the Surveyors whatever opinions may be held about the utility of replacing missing ones without the assistance of a theodolite. In Tavoy there is a considerable falling off in the percentage of protected marks. In Katha 14,075 marks were visited and none found missing, a most creditable record.

In Kyauksè nearly half the marks were not properly protected and in future years steps should be taken to effect an improvement in this direction. In Meiktila nearly 30 per cent. of the pipes visited proved to be broken or missing and no mention is made of any steps being taken to replace them. Here also there is great room for improvement.

In Myaungmya the 2-inch index maps of survey marks were printed by circles. This saves a great deal of needless copying and might be adopted generally.

There seems to be some difficulty in making Village Headmen understand their duties in this connection and with a few notable exceptions, there is considerable slackness on the part of the Revenue Surveyors in replacing broken pipes though this can be done without difficulty and should invariably be done, but the replacement of missing pipes should only be carried out by competent men.

Miscellaneous duties.

12. In Pegu, Amherst and a few other districts clerical errors were detected in tax-tickets and in Tharrawaddy and Toungoo one fraudulent entry in each district.

In Sandoway two village headmen are under trial for tampering with tax-tickets and one has been dismissed for the same reason.

In Myaungmya a headman tore off the parts of the tax-tickets showing annas and pies and altered the amount in an inferior kind of green ink. The case is still pending. In Magwe there were cases of tax-tickets being tampered with in three headmen's charges. In Sagaing one headman was convicted, having made red ink corrections over the green ink of the tax-tickets. Two cases of fraud were detected in Kindat. In Myingyan tickets were found to have been tampered with in one circle.

During the course of the year the subject of grazing reserves has been under discussion and after consulting all Commissioners and Deputy Commissioners rules have been drawn up for the demarcation and notification of all future reserves and also for the gradual examination and renotification where necessary of all reserves already in existence. [Financial Commissioner's Circular 6 of 1906.] Considerable progress has already been made in several districts in putting grazing reserves on a proper footing. In this connection special mention should be made of Akyab, Toungoo, Amherst and Thatôn.

In Akyab 17 new reserves were allotted and three extensions with a total area of 2,161 acres, but on the other hand six old reserves or parts of reserves aggregating 562 acres were thrown open to cultivation; 51 encroachments were reported by the Land Records Staff. In four cases the offenders were punished with one month's imprisonment and in 31 cases fines amounting to Rs. 567 were inflicted, 12 persons were evicted and four cases are still pending. In Kyaukpyu 157 acres additional were reserved and 23 persons were prosecuted for encroachment. In Pegu an area of 1,678 acres was reserved during the year, 48 persons were punished for encroaching, 27 cases are still pending, whilst eight were thrown out because the grazing-grounds concerned had not been properly demarcated. In Prome 46 acres were finally allotted during the year and all reserves have been properly demarcated. In Pyapôn, the total encroachments amounted to 216 acres: fines have been inflicted aggregating Rs. 425 and cases are still pending; 313 acres have been reserved during the year. In Bassein 24 new reserves have been formed covering 3,492 acres and 250 cases of encroachment reported of which 161 are being prosecuted but most of the cases are still pending. In Myaungmya 387 additional acres were reserved and encroachments to the extent of 375 acres reported. Fines on five offenders amounted to Rs. 200. In Thatôn 912 acres were reserved, but 172 acres were excluded from a reserve for a village site. In Amherst 4,973 acres were reserved nominally for grazing, but actually for fuel.

Grazing reserves are scarcely known or required in the greater part of Upper Burma. Cases are, however, pending in Shwebo and a small reserve of 32 acres was set aside in Myingyan during the year.

The increased interest that is shown in the prosecution of persons encroaching in grazing reserves is a satisfactory feature but so long as the fine inflicted represents only a very small proportion of the profit made on the encroachment it is not likely to act as a very effective deterrent.

In most districts the 1-inch topographical maps are kept up-to-date, but in some cases revised maps from the Survey of India are still awaited.

The extension of Rangoon Town and the preparation of plans for acquisition cases have thrown a large amount of extra work on the Supplementary Survey staff and proposals have been sent up for an increased establishment.

In Mandalay Cantonment lands 62 blocks have been surveyed during the year. The replacing of demarcation pillars, as noticed last year, is still progressing and encroachments are being reported. Supplementary Survey operations have also begun in Maymyo where the printed maps have been received of the residential area on the 16-inch scale and the block area on the 64-mile scale usual in Town Surveys.

Village headmen scheme.

13. In Akyab the village headman scheme was introduced into ten circles, and is being brought into force in another from 1st July 1906. Thirteen circles are still under circle thugyis. In Kyaukpyu 35 circle thugyis still remain, of whom two were placed under suspension during the year. In Pegu, a revised scheme is being brought into force throughout the district. In Prome, two circles were brought under village headmen. In Ma-ubin, one circle thugyi died, leaving five still in charge of circles. In Pyapôn, the Pyindaye circle has been split into five, of which two remain under the circle thugyi. In Henzada, two circle thugyis retired and one died. Twenty-five circles are still under circle thugyis. In Myaungmya, one circle thugyi was removed, one retired, and one was placed under suspension during the year. In Toungoo, on the formation of the Pyu township one circle which fell into both Pyu and Ôktwin townships was divided, one-half was placed under village headmen the other remaining under the circle thugyi. In Thatôn, only nine circles now remain to be brought under the scheme. In Amherst, the scheme was brought into force in four circles, leaving 16 thugyis' charges still remaining. In Tavoy, the revenue was collected by village headmen in five additional circles.

Conduct of the Supplementary Survey Staff.

14. Superintendents and probationers have almost all been reported on in the most favourable terms by Deputy Commissioners and Commissioners, and in most districts the subordinate staff is of distinctly good quality.

In a few districts, however, there is still room for improvement though there is no doubt that the standard of efficiency is steadily rising. Whilst there are a few cases of slackness on the part of Inspectors the more frequent cause of trouble is lack of authority.

In Akyab, the tendency to disregard orders is less marked than formerly, and in Pegu the weeding out of the unfit and useless is still going on. Some of the old Inspectors are reported as drifting from bad to worse but the new men are doing well. The work in Pyapôn is improving but still leaves something to be desired. In Bassein, three Inspectors are badly reported on. Two died during the year, one of plague and one of cholera. No improvement is visible in the work of the Revenue Surveyors nor can any be expected without better supervision by the Inspectors. In Myaungmya, one or two of the Inspectors lack authority: one Land Records and one *Potta* Inspector died during the year. In Amherst, two Inspectors failed to give satisfaction. In Sagaing, there has been an improvement and the opportunity was taken of the reduction of the staff to get rid of one or two of the most useless surveyors. In Kindat, the conduct of the staff is badly reported on, and considerable difficulty is experienced in getting good men. In Kyauksè, one Inspector is under suspension on a charge of having taken money to under assess cultivators, and in Yamèthin, one Inspector was sentenced to five years' rigorous imprisonment for giving forged maps to cultivators alleging that he could convert State into non-State land.

Twenty-five surveyors were dismissed or removed as against 37 last year, and 11 were suspended.

Maung Ye Din was appointed to officiate as Myoôk and a large number of Inspectors acted as Demarcation Officers for Town Surveys.

Inspection of field-work, Statement II.

15. The Director inspected Supplementary Survey field-work in 56 *kwins* in the Sandoway, Ma-ubin, Mergui, Mandalay, Sagaing and Lower Chindwin districts; the Deputy Director in 208 *kwins* in the Hanthawaddy, Henzada, Myaungmya, Thatôn, Amherst, Magwe, Kyauksè, Meiktila, Yamèthin and Myingyan districts and the Assistant Director in 67 *kwins* in the Akyab, Kyaukpyu, Pegu, Tharrawaddy, Prome, Toungoo, Amherst, Tavoy, Thayetmyo and Katha districts. The number of inspections by District Officers which last year rose to 187 owing to the efforts of Messrs. Smyth (33), English (22), Christie (16), Obbard and Wallace (13 each) has now fallen to 113 only; all these officers having been transferred or on furlough during the year. Mr. Gaitskell in Kyauksè inspected 12 *kwins* and Major Stone in Akyab 10, Mr. Drury in Magwe 9, Mr. Rigg in Yamèthin 8. Eight *kwins* were also checked in the Upper Chindwin and 7 in Meiktila. No inspections were made in Kyaukpyu, Pegu, Henzada, Tavoy, Minbu, and the Lower Chindwin, and one or two only in Prome, Myaungmya, Toungoo, Thatôn, Amherst, Mergui, Thayetmyo and Sagaing.

Inspections by Subdivisional Officers increased from 600 to 635, but the average fell very slightly. Inspections by Township Officers rose from 1,486 an average of 10 each to 1,788 an average of 11.

The following Subdivisional Officers are specially mentioned: Mr. C. F. Grant, I.C.S. (39 *kwins*), Mr. J. M. Baguley (26 *kwins* before his transfer in February), Maung Myat Tha Kyàw, T.D.M. (28), Maung Gale II (26), Maung Chin Hlaw and Maung Po V (25 each) and Maung Po Hnit, T.D.M. Of the Township Officers: Maung Paw Shan (84), Maung Po Hnan (44), Maung San We (43), Maung Tin II (39), Maung Aung Gyi IV (38), Maung Ko, Maung Po Chit and Maung Paw Nyein (37 each), Maung Tha Dun I and Maung Ba Gyaw III (27 each), Maung Gale IV, Maung Thin and Maung Po VI (26 each). The various officers in charge of Myingyan township also checked 44 *kwins* between them.

No inspections were done by the Subdivisional Officers of Buthidaung, Myanaung, Bassein, Ngathainggyaung and Kanbalu, or by the Township Officers of Myebôn, Cheduba, Sandoway, Ma-ubin, Kanaung, Einmè, Wakèma, Moulmeingyun, Bilin, Pa-an, Satthwa and Sale.

The amount of checking done though an improvement on last year is still far from sufficient.

The number of *kwins* checked by Superintendents, Land Records, has risen from 2,235 to 2,542. Mr. Wood in Shwebo again heads the list with 182 *kwins* followed by Messrs. Haddock and Connor (152 *kwins* each), McKertich (131), Palmer (121), Ripley (112), D.O'Hara (106), Baker (104), and Stubbs (100).

In Akyab Mr. Körper was very much overburdened with special duties, and no probationer could be spared to assist him. There is, therefore, some excuse for the small number of his inspections (45 *kwins*). The same remark applies to Mr. DeSouza at Amherst (47 *kwins*), who was assisted by a probationer for one month only. In Bassein, Mr. Johnson had to take sick leave and at Katha there were no less than three different officers in charge during the course of the field season. The probationers at Thayetmyo and Tavoy, the only two in charge of districts during the whole of the field season, were unable to do an adequate amount of inspections owing to the insufficiency of their pay and travelling allowance. Proposals have been submitted for an increase in both directions. Ill health is the explanation of the inadequate number of inspections by the Superintendents in Sandoway, Pyapôn and Myaungmya. In Ma-ubin, there is a great improvement on last year when only 17 *kwins* were inspected, but the number is still too low to be entirely satisfactory.

Taken all round the inspections by Superintendents average 85 per district which may be considered fairly good in view of the amount of extra work that has been thrown on them this year by Town, Fishery, Revision and Special Surveys. But at the same time there is certainly no reason why this average should not be raised.

16,874 *kwins* out of 33,347 were checked by Inspectors, an average of 103 per man as against 98 last year. Minbu comes first with 205 *kwins* per man, followed by Meiktila 177, Magwe 161 and Prome 154.

The total number of holdings checked by the Land Records staff and by District Officers was 606,961, in 16 per cent. of which errors of various kinds were met with. According to the abstract statements of inspections furnished by the inspecting staff of the Department, the percentages of errors discovered under the several main heads are as follows, *viz*: in survey, in respect to new plots or extensions, 16, chiefly mistakes of under half an acre, in fallow and crop-making, 1, in classification and rates, ½, and in statistics errors, 3½. The resulting *net* increase in revenue due to all inspections amounted to Rs. 12,983.

Training of Civil Officers in Survey and Land Records work.

16. During the year eight Assistant Commissioners, five Extra Assistant Commissioners and 24 Myoôks received a full course of instruction in Surveying and Land Records work, and all qualified by the required tests. The training of three officers has been deferred, while six are now undergoing training. In five districts from three to as many as seven officers were posted for training. It is in my opinion advisable to limit the number to be trained at one centre to two officers, otherwise there is danger of the ordinary Land Records work being interferred with.

Survey Schools, Statement III.

17. There was no change in the number and location of Government Survey Schools, which continue at 18. Government buildings are provided for the use of all but five schools which are accommodated in rented houses owing to unavoidable circumstances. The number of pupils on the rolls on the 31st March was 402; of these 35 per cent., chiefly in Upper Burma, paid no fees. The average number of students was 391, and the average number of days the schools were in session 266. There was a marked falling off in numbers in Insein, Meiktila, Mônywa and Yamèthin, while there were satisfactory increases in Henzada, Ma-ubin and Pegu. The classes were regularly attended with two exceptions, *viz.*, those at Insein and Katha. A number of the pupils left the schools towards the close of the session owing chiefly to their not being permitted to appear for the ensuing Syndicate examination. It is to be hoped that none of these boys were allowed to go up for the said examination as "private students." No less than one-fifth of the total number of pupils were holders of the VIIth Standard certificate and nearly one-third had passed the IVth, Vth, and VIth Standards; there were also one IXth and two VIII Standard boys, the former came from

the Pa-auk Monastic School which contributes largely to the Survey School in Amherst. The educational standard of the pupils who join the Survey Schools has notably improved in recent years; this is partly due to the comparatively new rule requiring that Survey Teachers and Inspectors of Land Records shall possess VIIth Standard certificates. Scholarships were allotted to deserving scholars to the extent of 68 of the value of Rs. 10 and 144 of Rs. 5 each per mensem. The cost of these scholarships came to Rs. 14,849. A sum of Rs. 480 was paid in prizes to the various schools according to their relative strength, and awarded on the results of a local test examination. The proportion of sons of thugyis and agriculturists to those of traders and others was as two to one. There is a continuous demand for qualified surveyors, and there is not much difficulty in obtaining suitable employment if candidates are willing to work outside of their own districts. In all, 68 passed pupils are reported to have obtained permanent work, and large numbers secured temporary appointments. More attention is now being given to the training of apprentices in practical surveying and land records work, chiefly in Pegu, Bassein, Prome, Minbu, Mandalay, Meiktila and Yamèthin. This instruction is very necessary to fit men with Syndicate certificates for positions as practical surveyors, and measures are being taken to give better effect to the rules on the subject. The total expenditure on schools amounted to Rs. 38,318 against an income of Rs. 5,569; this gives the net cost at Rs. 32,749. The cost of educating each pupil thus works out to Rs. 81, which is slightly lower than that of last year. The number of candidates from Government schools who qualified at the Syndicate examination of April was 251 in surveying, 236 in arithmetic, and 160 in Revenue Law; this gives a percentage of passes on the number presented for examination in each of the subjects at 70, 70, and 49, respectively. There is a very satisfactory improvement all round over last year, and the results are highly creditable to the schools concerned. The schools of Minbu, Ma-ubin, Toungoo and Henzada did best in surveying, while the least successful ones were those of Kyaukpyu and Katha. In Arithmetic the schools at Sagaing, Ma-ubin and Henzada did well, and those at Kyaukpyu, Katha, Mandalay and Meiktila poorly. The passes in Revenue Law were good for Pakôkku, Minbu, Toungoo, Sagaing, Ma-ubin and Mônywa but indifferent for Akyab, Kyaukpyu, Insein, Katha, Mandalay, Yamèthin and Pegu; the subject still needs more attention in most places. A pupil of the Government Survey School, Moulmein, obtained the "Clancey" medal for proficiency in surveying. The teachers have as a class worked satisfactorily: particularly those of Sagaing, Amherst, Minbu, Bassein and Ma-ubin; the teachers at Yamèthin, Insein and Katha require looking after.

The schools were visited from time to time by the Local Superintendents of Land Records and the success of the schools depends largely upon the amount of attention paid to them by the Superintendents. All the schools but Mandalay were inspected either by me or by the Deputy and Assistant Directors. The condition of the schools at Insein and Katha was unsatisfactory; the former was twice visited. The school at Moulmein was in a high state of efficiency, and the schools at Minbu, Ma-ubin, Sagaing and Pakôkku were also found in very good order. The mapping done in the schools at Moulmein, Bassein, Kyaukpyu and Minbu was exceptionally good, but drawing and printing require to be better taught in Sagaing, Henzada, Prome and Ma-ubin; surveyors ought also to be good draftsmen. Field-work generally receives its full share of attention, and there has been a noticeable improvement in it. On the whole, the schools are in a satisfactory state and well managed, and their usefulness for supplying the wants of the Department is unquestionable.

SECTION II.

AGRICULTURE.

18. *Collection of Economic Products.*—As in previous years a number of new specimens of various products, collected through the agency of District and Forest Officers, were sent to the Indian Museum, Calcutta, and to the Reporter on Economic Products. A specimen of an insect pest destructive to Doorian trees

in Tavoy was sent to the Imperial Entomologist. No specimens were forwarded to the Inspector-General of Agriculture, during the year.

Agricultural Shows.

19. Sanction was accorded to the holding of agricultural shows at Letpadan, Pyawbwè and Bhamo; but the first of these was abandoned owing to the outbreak of plague in that town. Shows were not held in the year at the centres Kyônpyaw (Bassein District), Taunggyi (Southern Shan States) and Sagu (Minbu District), at which shows were held in previous years. In Kyônpyaw the show has been discontinued owing to adverse local opinion; in Taunggyi a show was not held on account of the prevalence of wide-spread cattle-disease and the absence of the *Sawbwas* in connection with the Royal visit; and in Sagu the show was abandoned in consequence of cattle-disease and the presence of cholera. Out of a total sum of Rs. 6,500 from the Provincial grant only Rs. 2,356 were expended, and out of an Imperial grant of Rs. 1,000 only Rs. 250 were awarded in breeders' prizes for cattle. None of the medals, 12 in number, presented by the Inspector-General of the Civil Veterinary Department for the encouragement of cattle-breeding by the landholding classes were given out in the year in view of the inferiority of the animals exhibited. A proposal to hold an Agricultural and Industrial show at Shwebo was held over for consideration by the separate Department of Agriculture when formed. The Superintendent, Civil Veterinary Department, who has regularly attended these cattle shows, considers that the shows have entirely failed in the purpose for which they were intended, *viz.*, to stimulate an interest in cattle-breeding and to create a healthy rivalry between cultivators. He thinks that the people who attend are attracted by the *pwès* and other amusements that are usually held at the same time and not by any interest in the exhibits. In my opinion any possible good resulting from these Agricultural Shows is not commensurate with the expense, and I have recommended that the question of continuing or discontinuing them should be taken up by the new Agricultural Department when constituted.

The statement below exhibits the cost of the shows held in the year :—

Place of Show.	Date.	Provincial grant.	Imperial grant.	Prizes.	Contingencies.	Total.
1	2	3	4	5	6	7
		Rs.	Rs.	Rs.	Rs.	Rs.
Pyawbwè	15th—17th February 1906.	1,800	200	864	244	1,108
Bhamo	16th and 17th March 1906.	1,000	100	1,019	479	1,498

Pyawbwè (*Yamèthin district*).—This Show was attended by the Superintendent, Civil Veterinary Department, Burma, and by the Commissioner and Deputy Commissioner. The exhibitors were all, with few exceptions, from the Pyawbwè and Yindaw townships. There are no professional cattle-breeders in the district. The cattle exhibited were just a haphazard collection. Buffaloes are not numerous in either the Yindaw or Pyawbwè township. The show of stallion ponies was wretched. The foal mares were also very poor. Among the poultry exhibited there was an absence of special breeding. The following entries were numerous:—Sessamum (46), *Pyaung* (21), Cotton (22) and Paddy (so numerous that they were not counted). The entries in the cart events were very numerous and some good carts of the usual Burman type were seen. An extra prize was given for some Groundnuts and Plantains. The medals offered by the Inspector-General, Civil Veterinary Department, India, were not awarded.

Bhamo (*Bhamo District*).—The Commissioner, the Superintendent, Civil Veterinary Department, Burma, and the Deputy Director of Land Records and Agriculture, Burma, were present. The entries and attendance were not so good as last year. This is attributed partly to a general apprehension of the possibility of plague and partly to the fact that the country adjoining the district on the

Chinese side of the frontier was, at the time, in a disturbed state. As in previous years, exhibits of buffaloes were superior in number and quality to those of oxen, but no animal came up to a sufficiently high standard to justify the award of the medal of the Inspector-General, Civil Veterinary Department, India. The Civil Officer, Sinlumkaba, exhibited a basket of vegetables, the produce of the vegetable garden at Sinlum and the exhibit received much praise. A Fair was held for the first time in conjunction with the show, but did not prove a success although no admission fees were charged.

Experimental gardens, Statement IV.

20. No new experimental gardens were opened during the year. The total expenditure under all heads on the maintenance and upkeep of the five gardens amounted to Rs. 10,328-4-9, while a sum of Rs. 2,087-11-3 realized by the sale of garden produce reduced the net expenditure to Government to Rs. 8,240-9-6. Except for the appointment of a second *mali* for the Sima garden, the establishment remained the same as in the past year. The four probationers at Taunggyi are now reported to be improving in their work.

Bhamo.—The garden at Sinlumkaba continues to do well. A well-sheltered knoll, situate just behind the Civil Officer's new quarters with an abundant water supply from an aqueduct constructed at a small cost, was cleared and planted out with 187 young trees. These are reported to be doing well and great hopes are entertained that the progress will be maintained as the main troubles experienced at the old site, *viz.*, scarcity of water, exposure to high winds and poverty of the bottom soil, are factors non-existent in the new locality. Two swamps with very rich soil of good peat, decayed leaf manure and sand, have been prepared for cultivation during the ensuing year. No amount of persuasion will induce the Kachins to take to fruit culture; the only hope of ever interesting them in this industry is to instruct the pupils of the new Kachin School now building in the art of fruit growing and the Civil Officer therefore proposes to give the boys a practical lesson periodically in gardening and thus engender in them a taste for it. It is proposed to plant the school garden with fruit trees which would be tended and cared for by the pupils. The orchard was considerably added to by the addition of a number of young trees, the result of careful grafting and cutting. The vegetable and flower gardens were as usual excellent.

Chin Hills.—The progress of the fruit orchard at Falam is being steadily maintained, and a bumper crop of plums and greengages is expected this year. For the first time, since the opening of the experimental garden here, the apricot trees have blossomed. As peaches and apricots never ripen at Falam before the heavy rains and mist commence, a small experimental orchard has been started near the Chin Village of Falam at an altitude of 3,000 feet or about 2,000 feet lower than the main orchard at Falam, as it is considered probable that the trees here will escape the heavy mists which envelope Falam and so the fruit will have a better chance of ripening. One peach and five apricot trees from Taunggyi, planted in the orchard, are doing well and it is proposed to obtain more peach trees next cold weather. Though the fruit trees at Tiddim and Haka are flourishing, the flavour of the fruit is not good. The crop of peaches at Tiddim was very heavy, but the size of the fruit was very little larger and the flavour only slightly better than the wild peaches indigenous to this tract. Some 34 young trees obtained from Taunggyi have been put down at Tiddim and Haka but, owing to their dried state on arrival, it is doubtful whether many will live. It has been noticed that the fruit trees obtained from Taunggyi grow faster and fruit earlier than those imported from Saharanpur. The vegetable gardens at Falam, Tiddim and Haka are thriving and the outturn is always sufficient to meet the demands of purchasers. Asparagus is succeeding well at Falam, a fair yield having already been obtained from the beds laid out two years ago. Strawberries are doing well, some 175 lbs. having been sold last year for Rs. 43-12-0, and a heavy crop is expected during the next few months. Onions have also done very well, 342 lbs. being obtained. It is noteworthy that the cultivation of potatoes is becoming more general, but the crops produced by the Chins are still of a smaller size and of an inferior flavour to those grown by the Gurkhas who devote greater care and attention to the cultivation. Some seeds of the *Preng* bamboo from Henzada

planted in December 1904 have germinated at Haka and the four plants now about a foot high are doing well, but at Falam and Tiddim the experiment was a failure. Oats were not a success; on the other hand, wheat and barley have done exceedingly well and it is proposed to devote more attention in future to the cultivation of these products.

Katha.—The guava and plantain trees planted during the year are progressing favourably. The strawberries did badly on account of heavy rains and, as in the previous year, the peach crop, owing to destruction by birds and insects, was a failure. The vegetables, however, continued to thrive and good prices were realized by their sale. Potatoes are doing very well and give promise of good results. The cotton which promised so well last year did not turn out very well, the quantity obtained being small. The garden is well irrigated and has greatly improved.

Myitkyina (*Myitkyina Garden*).—The garden has been extended by the addition of land measuring four or five acres which is being stocked gradually with fruit trees. Peaches, as in the year previous, were not a success as the blossoms were damaged by the rains, and the apricots, cherries, pears and nectarines have as yet borne no fruit, though flowers appeared on some of the trees. Thirty-one grafts of the peach tree from Taunggyi have been laid down quite recently. The plum trees bore fruit of good flavour, but though the apple trees fruited the fruit did not ripen. The Avocada pears, loquats, oranges and pomeloes are thriving but the climate does not appear suitable for the culture of Lichis, Cherri-moyers, grape-vines and figs. The vegetable garden has done well. The *Mocha* coffee trees put down the year before last are flourishing.

Sima garden.—All the fruit trees did well, especially plums. The vegetables grown from Sutton's seeds gave very good results. Owing to the tea seeds being bad only two out of a bag-full of seeds germinated, but as tea is indigenous to these hills, hopes are entertained that the experiment will eventually prove a success. All the coffee plants have died.

Taunggyi.—Owing to the prolonged high winds preceding the monsoon and the excessively heavy late monsoon, considerable damage was done to the orchard and vegetable gardens. Other factors which also tended to retard transplanting and sowing were the exceptionally hot, dry weather during the months of February to May and scarcity of water due to the new water scheme. Notwithstanding these unfavourable conditions, the crop of peaches, plums, figs and vines has been very fair. The Hamburg species of potatoes were a fair success. Unlike last year, Avocada pears are doing well. The cultivation of maize (Landreth's "Earliest Table Variety") has been a success. Virginia and Havana tobacco plants grew well but the tender leaves were destroyed by the heavy rains. Seven varieties of cotton were experimented with and fair success was obtained, the 'Early Carolina prolific' and 'Excelsior' doing best. It is gratifying to observe that coffee plants (Arabian) are doing very well. Mr. Colyear is a skilful gardener and takes great pride in fruit and experimental cultivation.

Experimental cultivation: Statement IV.

21. The actual expenditure on experimental cultivation during the year was Rs. 3,018-4-6. In addition a sum of Rs. 188-0-9, the cost and carriage of two fodder cutters and one corn-sheller sent to Myingyan for demonstration, and a sum of Rs. 62-5-0, the cost of French silkworm eggs purchased during the previous year, were expended which brought the total expenditure under this head to Rs. 3,268-10-3.

Tobacco (*Nicotiana tabacum*).—As in the past year, 108 lbs. of Havana and 81 lbs. of Virginia tobacco seeds procured from America were distributed to 20 districts. Complete failures are reported from seven districts due in three cases to heavy rains or floods and in three more to lack of careful attention while in one case only was the soil reported as unsuitable. The cultivation was a success in Shwebo, Minbu, Northern Arakan and Bhamo, while only partial successes were reported from Tharrawaddy, Pakôkku, Tavoy, Toungoo, Mandalay, Prome, Henzada and Bassein, due to abnormal floods or heavy rains. The seeds supplied to the Deputy Commissioner, Ma-ubin, were not distributed to cultivators through a regrettable oversight. This is unfortunate, as the growing

of American tobacco has proved conspicuously successful in this district. The outturns per acre varied from 467 lbs. to 1,028 lbs. in the case of Virginia, while from 92 lbs. to 571 lbs. were obtained from Havana. The prices, as usual, ruled high and were considerably better than those realized for the country variety.

Groundnuts.—The experiments have been very successful in the Yamèthin, Meiktila and Sandoway Districts. The cultivation of this product is steadily advancing and recently seeds of the Mauritius variety were obtained from a local plantation in Amherst and widely distributed.

English vegetable seeds were distributed chiefly in Upper Burma and were generally successful; in a private garden at Insein they did remarkably well.

Tea (*Camellia theifera*).—Owing to the indent for seeds from Kurseong not having been complied with in time, the order was cancelled and no distribution was therefore made.

Coffee (*Coffea*).—The experiments with imported Liberian coffee seed were again unsuccessful, as also were those with acclimatized seeds of Arabian coffee from the Southern Shan States. In the Government Experimental Garden at Taunggyi, Arabian coffee plants are flourishing.

Cotton (*gossypium sp.*).—Experimental cultivation with five different kinds of American upland cotton was tried in several Upper Burma Districts. In Myingyan the results were very satisfactory, while failures were reported from most of the other districts. Seeds of the Pernambuco tree cotton were distributed to some private persons in the Amherst district and the results of the cultivation are said to be encouraging. Experiments to improve the indigenous variety of cotton were carried on successfully in Northern Arakan, Katha and Meiktila districts. Messrs. Finlay, Fleming and Company of Rangoon have successfully experimented with several well-known varieties of American cottons in the Myingyan district, Texas Burr and Caravonica silk especially doing well.

Para Rubber (*Hevea Braziliensis*).—A consignment of seeds of the rubber tree was obtained from Ceylon and distributed in the districts of the Tenasserim Division. The seeds were unfortunately received too late for sowing and also were in bad condition. They were, however, planted out but the results were everywhere unsatisfactory.

Paddy (*Oryza sativa*).—Excellent results were obtained in Yamèthin with several kinds of paddy procured from other districts in the Province, but in Kyaukse the experiment was unsuccessful. The *Paungmalaung* variety obtained from Shwebo did particularly well in Yamèthin.

Miscellaneous.—Seeds of the Indian Fir or Mast tree (*Polyalthia longifolia*) and the Chinese Tallow tree (*sapium Sebiferum*) were a total failure. The results attending the cultivation of American sweet potatoes and West Indian and Fijian yams and Otaheite potatoes were not encouraging. Oat seeds (*Avena sativa*) were successful in Myitkyina and the Northern Shan States, and partly in Lower Chindwin and Bhamo, while wheat from Sagaing is reported to be doing excellently in the Chin Hills. A consignment of *Crotaturia Striata* was obtained from a private estate in Amherst and distributed for experiment in five districts; the plant is said to be a good soil improver and can also be utilized as a green manure for paddy and other cultivation.

Miscellaneous.

22. The annual Trans-frontier Trade and Season and Crop Reports, also the Note on Rainfall Registration, issued separately. The rice and cotton forecasts were published as usual; the former relates to the 15 principal rice producing districts in Lower Burma, and the latter to all districts in which cotton is grown, whatever the area.

The re-organization of the superior branch of the Land Records Department was sanctioned in the year by the Secretary of State and has now come into force; some much needed relief will thereby be afforded, though the strength of the Department is still inadequate. Rules have been prepared for the recruitment, admission and training of Probationers, and are at present under consideration.

Instructions concerning revision survey were prepared at the desire of the Financial Commissioner and have been issued. Instructions for holding-marking where undertaken by special or revision survey parties have also been prepared, as well as a Survey Manual for Land Records Officers. A Land Records Manual is under preparation.

Services of officers.

23. All the Superintendents and Probationers of Land Records have been favourably reported on. Most of them had exceptionally heavy duties in connection with various special surveys under the strain of which several have broken down in health. The officers deserving special mention for their all-round excellent work are Mr. Beechey in Pegu, Mr. Haddock in Mandalay, Mr. Palmer in Sagaing, and Mr. Purchase in Pyapôn. Mr. Körper in Akyab, Mr. DeSouza in Amherst, Maung Pe Maung and Maung San Shwe in charge of the Pyapôn and Pegu special survey parties, respectively, deserve great credit for successfully carrying out important surveys under considerable difficulties.

Mr. Lowry, Deputy Director, has been most energetic in his inspections and has introduced several useful improvements in the details of Supplementary Survey work. He has also been of great use to me in office. Mr. Clancy, Assistant Director, has continued to work with his usual zeal and energy. His work in connection with Revision and Special Surveys has been particularly heavy. He also devoted a considerable amount of his scanty leisure to the preparation of the Survey Manual referred to above.

T. C. WILSON,
Settlement Commissioner and Director of Land Records and Agriculture, Burma.

RANGOON:
The 20th August 1906.

APPENDICES.

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STATEMENT NO. I.—*Area under and cost of Supplementary*

District.	Total area. Total in	Under occupation.	Under cultivation.	Under assessment.	Total assessment (including Cess in Lower Burma) on the area in column 5.	Number of Inspectors.
1	2	3	4	5	6	7
	Sq. MILES.	ACRES.	ACRES.	ACRES.	Rs.	
Akyab	1,921	628,259	534,379	617,769	1,700,977	5
Kyaukpyu	762	147,009	138,272	144,536	257,869	4
Sandoway	268	52,822	50,287	52,190	97,371	3
Hanthawaddy	2,621	1,214,851	1,168,008	1,213,630	4,003,643	9
Pegu	2,364	858,558	789,471	854,916	2,180,174	9
Tharrawaddy	1,159	464,216	442,850	463,169	1,220,086	5
Prome	1,724	348,337	330,310	347,449	589,369	4
Ma-ubin	1,648	439,161	400,213	438,323	1,030,136	4
Pyapôn	1,165	560,289	536,713	554,931	1,525,142	5
Bassein	2,223	638,878	562,438	636,082	1,538,028	8
Henzada	1,809	538,301	465,533	531,857	1,276,834	6
Myaungmya	1,827	598,990	535,881	596,328	1,836,039	6
Toungoo	1,497	357,775	316,930	324,134	734,357	4
Thatôn	2,242	643,957	611,180	614,216	1,218,774	6
Amherst	1,298	373,325	336,916	349,994	744,137	5
Tavoy	468	115,229	106,199	113,151	241,787	3
Mergui	588	84,604	78,186	83,884	166,596	3
Thayetmyo	577	97,661	79,262	97,357	136,322	2
Minbu	1,418	414,436	254,970	216,240	428,877	5
Magwe	2,915	910,255	422,191	394,989	461,239	8
Mandalay	700	237,919	153,480	142,285	654,969	5
Katha	1,006	175,202	156,952	153,335	177,965	5
Shwebo *	*4,138*	*1,681,122*	*663,696*	...	...	*10*
Sagaing	1,862	724,286	470,688	421,312	473,150	8
Lower Chindwin	2,595	723,151	442,928	388,493	294,836	6
Upper Chindwin	97	35,718	27,932	27,188	33,423	1
Kyauksè	566	248,422	174,724	166,212	673,397	6
Meiktila	1,559	597,126	376,776	303,654	435,717	5
Yamèthin	1,776	424,642	292,823	292,823	389,817	5
Myingyan	2,997	1,140,375	587,630	472,887	426,486	8
Total for 1905-06 ...	43,652	13,793,754	10,844,122	11,013,334	24,947,517	153
Total for 1904-05 ...	42,837	13,453,086	10,941,278	10,542,767	† 23,985,115	148

* Under
† Revised

Survey for the year 1905-06 (Paragraph 7).

Number of Surveyors.	Total cost.							Remarks.
	Per square mile (column 2).			Per acre of the area in column 3.	Per cent. of the assessment in column 6.	Of Superintendence and inspection.	Of the survey staff.	
	Of Superintendence and inspection.	Of survey staff.	Of combined total.					
8	9	10	11	12	13	14	15	16
	Rs.	Rs.	Rs.	Acres.	Rs.	Rs.	Rs.	
73	7·55	19·36	26·91	1·317	3·04	14,507	37,190	
36	15·22	11·78	27·00	2·240	7·98	11,599	8,980	
11	32·95	17·70	50·65	4·112	13·94	8,830	4,744	
107	9·37	23·34	32·71	1·129	2·14	24,552	61,184	
75	9·50	16·91	26·41	1·164	2·86	22,466	39,971	
49	9·19	21·60	30·79	1·230	2·92	10,646	25,035	
47	7·46	13·65	21·11	1·671	6·17	12,858	23,527	
51	5·28	15·95	21·23	1·275	3·40	8,709	26,286	
64	14·15	27·37	41·52	1·381	3·17	16,487	31,887	
70	8·19	16·16	24·35	1·356	3·52	18,213	35,930	
62	7·16	17·51	24·68	1·327	3·50	12,960	31,679	
57	7·80	13·96	21·76	1·062	2·16	14,243	25,501	
41	7·63	12·34	19·97	1·337	4·07	11,415	18,478	
71	9·10	15·74	24·84	1·384	4·57	20,413	35,278	
44	9·01	14·40	23·41	1·302	4·08	11,693	18,690	
22	16·31	19·78	36·09	2·345	6·99	7,635	9,256	
16	17·42	11·59	29·01	3·227	10·24	10,245	6,817	
19	11·03	15·03	26·06	2·463	11·03	6,362	8,670	
45	7·83	12·47	20·30	1·112	6·71	11,110	17,685	
66	5·68	8·80	14·48	0·742	9·15	16,544	25,663	
47	22·38	27·44	49·82	2·345	5·32	15,663	19,207	
34	12·66	15·81	28·47	2·615	16·09	12,734	15,906	
100	*5·06*	*8·32*	*13·38*	*0·527*	...	*20,941*	*34,426*	
80	11·29	17·77	29·06	1·195	11·44	21,017	33,099	
56	5·38	8·79	14·17	·814	12·47	13,970	22,805	
8	50·25	29·36	79·61	3·459	23·10	4,874	2,848	
45	25·31	33·74	59·05	2·153	4·96	14,324	19,099	
54	9·67	13·48	23·15	·967	8·28	15,068	21,023	
52	6·85	11·23	18·08	1·210	8·24	12,160	19,949	
73	6·05	8·70	14·74	0·620	10·36	18,122	26,061	
1,475	9·15	15·40	24·55	1·243	4·30	399,419	672,448	
1,413	8·90	14·90	23·80	1·212	4·25	381,298	638,142	

settlement.
figures.

STATEMENT No. II.—*Supplementary Survey Inspections for*

District.	Total number of *kwins* in tract.	NUMBER OF *KWINS* IN WHICH				
		By Land Records Staff.				
		Superintendent.	*Inspectors.*			Total.
			Number of Inspectors.	Number of *kwins* checked.	Average.	
1	2	3	4	5	6	7
Akyab	1,103	45	5	522	104	546
Kyaukpyu	699	73	4	324	81	397
Sandoway	291	51	3	221	74	272
Hanthawaddy	2,807	70	9	963	107	1,013
Pegu	1,207	81	9	761	85	786
Tharrawaddy	544	112	5	507	101	619
Prome	1,024	95	4	617	154	647
Ma-ubin	541	60	4	295	74	355
Pyapôn	627	59	5	376	75	381
Bassein	1,274	25	8	600	75	606
Henzada	849	106	6	622	104	692
Myaungmya	1,057	66	6	583	97	609
Toungoo	769	84	4	348	87	372
Thatôn	1,375	71	6	472	79	543
Amherst	864	47	5	365	73	388
Tavoy	487	37	3	354	118	365
Mergui	642	72	3	246	82	318
Thayetmyo	377	44	2	216	108	200
Minbu	846	129	5	1,025	205	721
Magwe	2,264	104	8	1,285	161	1,285
Mandalay	722	152	5	528	106	405
Katha	1,813	25	5	417	83	442
Shwebo*	933	195	11	654	59	698
Sagaing	1,210	121	8	992	124	754
Lower Chindwin	1,606	152	6	611	102	724
Upper Chindwin	183	80	1	85	85	121
Kyauksè	639	83	6	510	85	593
Meiktila	1,910	95	5	886	177	981
Yamèthin	1,886	77	5	438	88	515
Myingyan	2,793	131	8	1,051	131	1,182
Total for 1905-06	33,347	2,542	164	16,874	103	17,530
Total for 1904-05	32,142	2,235	158	15,442	98	16,020

* Under

the year 1905-06 (Paragraph 15).

THE FIELD WORK WAS TESTED.

Difference in revenue due to corrections.		By District Officers.								Remarks.
			Subdivisional Officers.			*Township Officers.*				
Total increase.	Tota ldecrease.	Deputy Commissioner.	Number of Subdivisional Officers.	Number of *kwins* checked.	Average.	Number of Township Officers.	Number of *kwins* checked.	Average.	Total.	
8	9	10	11	12	13	14	15	16	17	18
Rs.	Rs.									
634	75	10	3	39	13	8	79	10	128	
391	145	...	2	26	13	9	16	2	42	
35	11	4	...	...	...	3	28	9	32	
368	74	3	3	49	16	7	199	28	251	
1,657	150	...	2	42	21	5	41	8	83	
235	22	5	2	18	9	5	85	17	108	
118	8	2	3	18	6	7	71	10	86	
500	...	5	2	32	16	4	27	7	64	
2,222	602	5	2	1	1	4	21	5	27	
2,030	506	4	2	...	...	6	15	3	19	
1,129	261	...	2	25	13	6	75	13	100	
1,776	322	1	2	9	5	4	5	1	14	
904	220	2	3	29	10	7	56	8	87	
166	13	2	3	23	8	6	43	7	68	
250	...	2	3	21	7	7	68	10	91	
108	2	...	...	...	...	4	56	14	56	
263	30	2	2	9	5	4	42	11	53	
84	148	2	2	16	8	4	4	4	32	
1,244	569	...	2	23	12	5	52	10	71	
392	230	9	2	41	21	5	63	13	113	
1,284	1,002	4	2	22	11	4	89	22	115	
53	129	5	3	39	13	7	27	4	66	
...	...	5	3	7	2	8	64	8	69	
1,048	436	1	2	13	7	6	161	27	175	
282	320	...	2	8	4	5	42	8	50	
96	353	8	1	23	23	1	22	22	50	
685	340	12	2	31	15	3	34	11	77	
430	318	7	3	46	15	3	83	28	136	
683	530	8	2	17	9	5	28	6	50	
1,006	274	5	2	8	4	6	182	30	195	
20,073	7,090	113	64	635	10	158	1,788	11	2,208	
17,763	6,279	187	58	600	10	142	1,486	10	2,216	

settlement.

STATEMENT NO. III.—*Statistics relating to Government*

Station in which school is established.	Average number of pupils on the rolls in each month.	Number of days the school was in session.	Average number of days each pupil received tuition.	NUMBER OF PUPILS ON THE ROLLS ON THE 31ST MARCH.		
				Pupils paying fees.	Free pupils.	Total.
1	2	3	4	5	6	7
Akyab	16	253	252	24	...	24
Kyaukpyu	15	281	236	16	1	17
Insein	15	270	249	18	...	18
Pegu	21	271	217	23	...	23
Prome	22	282	254	9	9	18
Ma-ubin	31	272	258	28	3	31
Bassein	16	248	215	15	1	16
Henzada	23	264	231	23	3	26
Toungoo	21	258	235	24	1	25
Moulmein	25	251	251	25	...	25
Pakôkku	29	277	272	3	28	31
Minbu	28	273	256	8	24	32
Mandalay	21	265	243	11	9	20
Katha	17	275	249	4	11	15
Sagaing	31	259	250	15	16	31
Môngywa	15	258	246	6	9	15
Meiktila	27	274	263	5	14	19
Yamèthin	18	249	191	4	12	16
Total for 1905-06 ...	391	266	243	261	141	402
Total for 1904-05 ...	404	269	243	277	137	414

STATEMENT NO. IV.—*Receipts and Expenditure of*

No.	Station.	Budget allotment.	Receipts from sale of products.	Establishment.
1	2	3	4	5
		Rs.	Rs. A. P.	Rs. A. P.
1	Bhamo (Sinlumkaba)	1,935	114 15 3	1,318 1 8
2	Chin Hills (Falam)	1,180	415 4 6	540 0 0
3	Katha (Katha)	1,850	577 14 0	1,200 0 0
4	Myitkyina (Myitkyina and Sima)	2,369	344 3 0	1,034 3 7
5	Southern Shan States (Taunggyi)	4,816	635 6 6	3,093 9 7
6	Distribution of seeds from Headquarters	3,450	.....	.....
7	Distribution of agricultural implements from Headquarters ...	500	.....	.....
8	Sericulture (French silk-worm eggs)	3,000	.....	.....
	Total ...	19,100	2,087 11 3	7,185 14 10

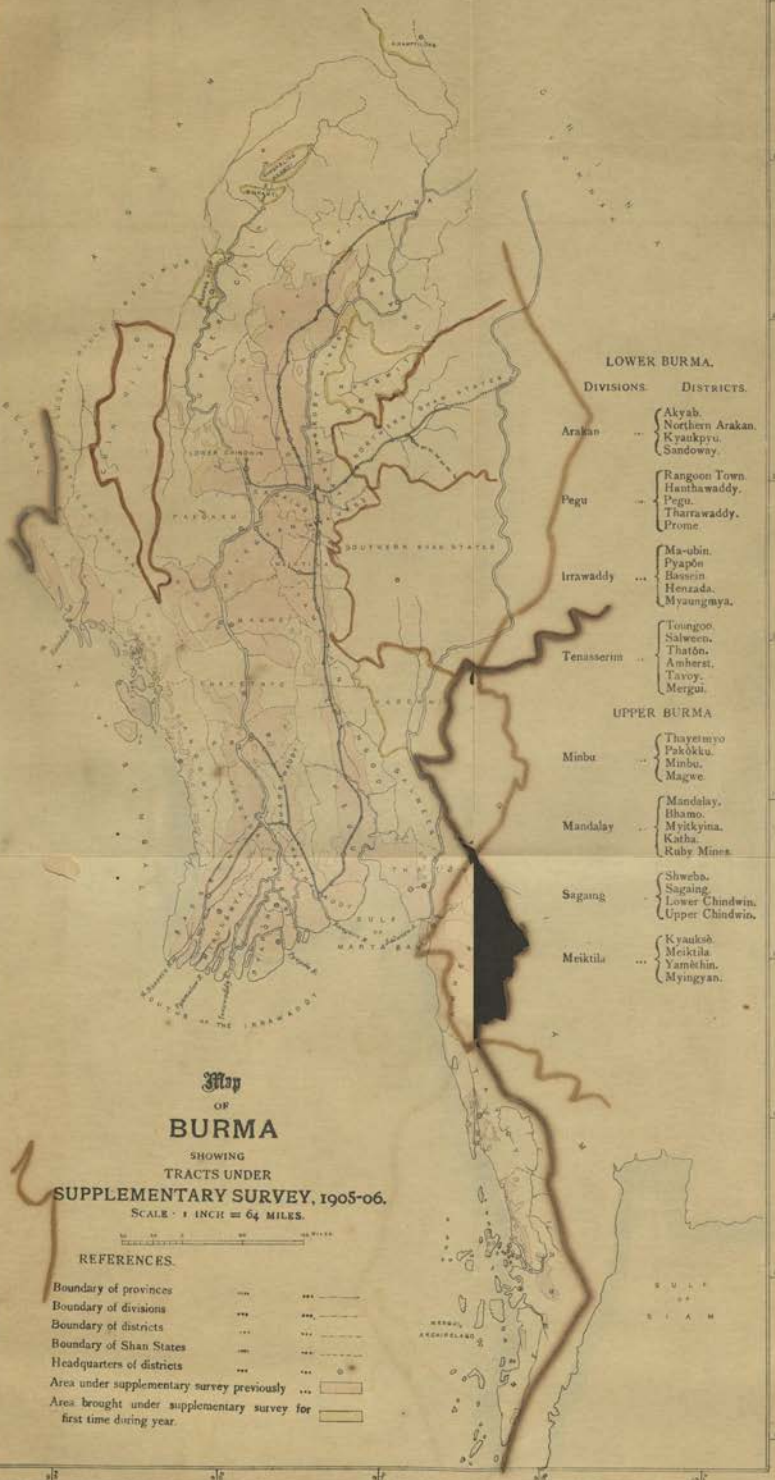
G. B. C. P. O.—No. 127, S. C., D. L. R. and A., 28-9-1906—314—T. F. B.

Survey Schools for the year 1905-06 (Paragraph 17).

Total income.	Expenditure					Number of pupils who passed the last examination in			Remarks.
	On establishment.	On scholarships.	On prizes.	On other contingencies.	Total.	Surveying.	Arithmetic.	Revenue law.	
8	9	10	11	12	13	14	15	16	17
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.				
235	1,104	457	26	432	2,019	10	9	1	
161	1,177	677	18	94	1,966	5	3	1	
408	1,152	579	20	416	2,167	15	13	3	
512	1,162	892	26	29	2,109	13	15	5	
218	1,104	958	22	450	2,534	10	11	8	
723	1,214	955	32	181	2,382	24	23	14	
453	1,008	996	20	420	2,444	8	12	9	
502	804	523	30	45	1,402	20	20	6	
532	1,140	467	28	86	1,721	22	14	16	
667	1,104	1,590	30	302	3,026	17	17	13	
43	1,104	1,024	36	101	2,265	17	19	19	
114	1,104	1,017	36	320	2,477	27	16	18	
177	944	604	30	67	1,645	9	7	3	
187	1,104	764	18	144	2,030	6	4	3	
284	1,104	841	34	296	2,275	17	24	15	
111	1,104	519	24	119	1,766	10	12	13	
173	952	1,397	28	215	2,592	12	7	9	
69	723	589	22	164	1,498	9	10	4	
5,569	19,108	14,849	480	3,881	38,318	251	236	160	
5,627	20,029	14,499	480	4,530	39,538	203	152	113	

Experimental cultivation during 1905-06 (Paragraphs 20 & 21).

Expenditure.						Remarks.
Purchase of seeds.	Up-keep of garden.	Feed and keep of stock.	Miscellaneous contingencies.	Purchase of live-stock and agricultural implements.	Total.	
6	7	8	9	10	11	12
Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
77 15 0	222 0 0	4 8 0	145 14 0	...	1,768 6 8	
150 15 0	304 1 0	...	134 8 0	...	1,129 8 0	
37 6 0	...	...	15 8 0	180 4 0	1,433 2 0	
199 2 0	523 0 0	...	75 3 6	11 10 0	1,843 3 1	
707 4 5	246 10 0	30 0 0	68 7 0	8 2 0	4,154 1 0	
2,856 4 0	...	...	162 0 6	...	3,018 4 6	
...	...	...	12 10 6	175 6 3	188 0 9	
...	...	...	...	...	62 5 0	This amount was outstanding from the previous year.
4,028 14 5	1,295 11 0	34 8 0	614 3 6	375 6 3	13,596 15 0	


LOWER BURMA.
DIVISIONS. DISTRICTS.
Arakan ... Akyab. Northern Arakan. Kyaukpyu. Sandoway.
Pegu ... Rangoon Town. Hanthawaddy. Pegu. Tharrawaddy. Prome.
Irrawaddy ... Ma-ubin. Pyapôn Bassein Henzada. Myaungmya.
Tenasserim ... Toungoo. Salween. Thatôn. Amherst. Tavoy. Mergui.
UPPER BURMA
Minbu ... Thayetmyo Pakôkku. Minbu. Magwe.
Mandalay ... Mandalay. Bhamo. Myitkyina. Katha. Ruby Mines.
Sagaing ... Shwebo. Sagaing. Lower Chindwin. Upper Chindwin.
Meiktila ... Kyaukse. Meiktila Yamèthin. Myingyan.
Map
OF
BURMA
SHOWING
TRACTS UNDER
SUPPLEMENTARY SURVEY, 1905-06.
SCALE - 1 INCH = 64 MILES.
REFERENCES.
Boundary of provinces
Boundary of divisions
Boundary of districts
Boundary of Shan States
Headquarters of districts
Area under supplementary survey previously
Area brought under supplementary survey for first time during year.
GULF OF SIAM

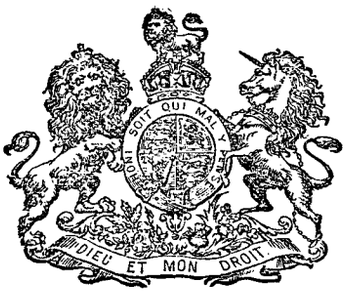
G.B.C.P.O. — No.122. S.C.D.L. R.A. 5.9.06.—325. LITHO.

4.

LAND RECORDS ADMINISTRATION REPORT

FOR

THE YEAR ENDING 30th JUNE 1907.



RANGOON
OFFICE OF THE SUPERINTENDENT, GOVERNMENT PRINTING, BURMA
1907

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[The maximum limit of the text of the Report is 20 pages.]

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LAND RECORDS ADMINISTRATION REPORT

FOR THE YEAR ENDING 30th JUNE 1907.

Prefatory.

The Department continued in my charge during the year. From the 15th October 1906 I was relieved of the Agricultural Section by Mr. J. MacKenna, M.A., I.C.S., who assumed charge of the Department of Agriculture, as its Director, on that date. From the same date Mr. W. E. Lowry, B.A., I.C.S., was confirmed as Deputy Director of Land Records. On Mr. Lowry's proceeding on nine months' leave from the 25th April 1907, Captain T. L. Ormiston, I.A., M.A., Barrister-at-law, was appointed to officiate as Deputy Director but was only able to assume charge of his new appointment from the 25th May 1907. During this interval the Assistant Director officiated as Deputy Director. The post of Assistant Director was held throughout the year by Mr. J. C. Clancey, F.R.A.S.

During the year long leave was granted—on medical certificate in all cases but one—to 7 senior officers, and short leave was given to 5 officers. At the close of the year there were 4 officers on long leave, and since then 5 more officers have obtained leave, one for a long period on medical certificate. Besides the two Probationers named in last year's report, Mr. Smart was newly appointed to the Department. Practically every Probationer, down to the last-joined officer, has been, or soon will be, in independent charge of a district. And in no less than 6 cases have the services of *Akunwuns* or Myoôks under training been requisitioned to hold temporary charge of Land Records Offices. There were as many as 12 transfers necessitated in the year and several others are to follow. It has been extremely difficult to provide officers for district charges owing to the Department being undermanned. A scheme for increasing the cadre of the Department is now before Government for sanction.

Orders relating to the last re-organization scheme for the superior branch of the Department were received in the year, and a re-grading in accordance therewith was carried out with effect from the 17th September 1905. In connection with the scheme, the appointment of Registrar of the Rangoon Town Lands was permanently filled by a Superintendent of Land Records from the 12th October 1906. There were three grade promotions in the year, while three Officers who were *sub. pro tem.* were confirmed in their grades.

As there was but little revision survey work remaining to be done in the Pyapôn District, the Pegu and Pyapôn Revision Survey Parties were amalgamated from the 1st February 1907, the date on which Maung San Shwe, Superintendent of Land Records, who was in charge of the Pegu Party, went on leave. The combined Party was placed in charge of Maung Pe Maung, Superintendent of Land Records, who had been in charge of the Pyapôn Party.

Demarcation preliminary to Survey.

1. Demarcation in advance of cadastral survey by No. 7 Party of the Survey of India Department was undertaken in the Pyapôn and Bogale Townships of the Pyapôn District by a Demarcation Officer. Work was commenced on the 1st November 1906 and completed on the 15th March 1907. The requisite demarcation maps were supplied to the Survey officer in good time considering the scattered nature of the tract and its water-logged condition at the time of demarcation. The total area demarcated was 170 square miles, but of this an area of 27 square miles consisting of two large jungle blocks which are to be reserved as grazing grounds will be surveyed on the 4-inch scale only. The cost of the operations amounted to Rs. 999. The quality of the demarcation work in this district and in Thayetmyo and Pakôkku, which were demarcated previously, is described by the Officer in Charge of the Survey Party as being on the whole good.

In Akyab demarcation preliminary to survey by special agency was continued by the local staff in the Maungdaw and Rathedaung Townships. An area of 60 square miles was demarcated, and the work is said to have been good.

A special Demarcation Officer was engaged in the demarcation preliminary to survey by special agency in the Kyaukpyu District for a period of four months. Only 24 square miles were completed in this time in the Cheduba, Ramree and Kyaukpyu Townships, owing to the unnecessary inclusion of extensive jungle and hills in the *kwins* for survey. The Assistant Director inspected the work and set it in order, and steps were taken to have the remainder of the area intended for demarcation done in time for next season's surveys. The demarcation of the year was, however, sufficient for the requirements of the surveys of the year of report. The cost of the demarcation amounted to Rs. 870.

For the original survey of *kwins* falling in the unsettled tracts in the Pegu District, which remained over from the previous year, no regular demarcation was done in advance of the survey by special agency, either by special or local officers, as the area for survey was inconsiderable. The traverse surveyors followed up the boundaries of the *kwins* for survey with the help of villagers. The area dealt with was 7 square miles situated in the Tandawgyi Circle of the Payagale Township. No cost was incurred.

The preliminary demarcation in preparation for the survey by a special staff in the Tharrawaddy District was effected by local Inspectors and Surveyors. The work was done in September and October and was confined to two circles each in the Tapun and Minhla Townships. The area consisted of 50 square miles. The work was difficult and was of good quality.

An area of 56 square miles was demarcated in four circles of the Kyaikmaraw Township in the unsettled tracts of the Amherst District, in advance of the cadastral survey by a special staff. The assistance rendered by villagers was inadequate, and progress was thereby retarded but not sufficiently so to interfere with the survey that followed. The work was done by an Inspector of the Revision Survey Party employed in the district in addition to his survey duties and was well performed.

In Katha local surveyors demarcated for subsequent survey 12 small *kwins* which lie for the most part on the east bank of the Irrawaddy River in the Katha Township of the Katha District. This area, containing but small patches of scattered cultivation, could not be taken up, owing to want of time, by the Special Survey Party which operated in the district in 1904-05.

Survey by No. 7 Party, Survey of India Department.

2. The Party brought its operations to a close in the Pakôkku District by the completion of the detail survey of 514 square miles which had been traversed in the previous season. It also traversed 686 square miles in the upper section of the Thayetmyo District, of which 43 square miles were surveyed in detail; the balance will be done next year. Further surveys in the district have been suspended till the approach of the next Revision Settlement of the lower portion of the district, when the balance of the areas originally intended for survey by No. 7 Party will be undertaken by local agency. In the Pyapôn District a total area of 170 square miles was traversed and 132 square miles cadastrally surveyed; 26 square miles of the traversed area consisted of river beds and were therefore not mapped, while of the remaining 12 square miles which had been traversed full topographical details could not be mapped owing to the ground being under water from the heavy rains. These 12 square miles will be surveyed next season. The general health of the Camp in Pyapôn is described as bad. The cost of the season's work amounts to Rs. 1,79,854. The Party was also engaged in the preparation of the Burma traverse charts, at a cost of Rs. 2,068. In addition to the areas in the Thayetmyo and Pyapôn Districts for cadastral survey next year, the Party will also take up both the traverse and cadastral survey of about 175 square miles of what are known as the Sittang accretions situated in the Pegu District where cultivation has now assumed some permanency, and of about 50 square miles of new country containing blocks of cultivation lying in villages in the unsettled tracts of the Yamèthin District which

were recommended for survey by the Settlement Officer at the settlement of the district.

Revision Surveys.

3. The map and area and other connected work of the recess relating to the various revision surveys by special staffs executed last year in the Ma-ubin-Pyapôn, Pegu, Amherst and Thatôn Districts was duly completed in the recess season. The office work was inspected by the Assistant Director and found to be of good quality in the first three districts, but the work in Thatôn had not been properly supervised and was somewhat defective. Steps were immediately taken to remedy the defects and the final maps produced were on the whole of fair quality. The map drawing in Pegu was particularly neat and well executed. For Ma-ubin-Pyapôn numbered *kwin* traces and area statements were forwarded to the Revision Settlement Officer who was operating in those districts. The Maubin-Pyapôn Revision Survey Party suffered a great loss in the retirement and subsequent death of the Head Inspector Kanhia Lal who had been associated with local agency parties since 1891. Numbered *kwin* traces for settlement requirements in Amherst and Thatôn were prepared by the Revision Survey parties; in the case of Amherst, however, some of the *kwin* traces relating to the surveys of the year were unnumbered, the numbering being postponed to a later date. The maps of all the districts were on completion forwarded to the Government Press for lithography.

In the year Revision Surveys by special agency were in progress in the districts of Pyapôn, Pegu, Amherst, Thatôn and Hanthawaddy. In the first two districts the operations were conducted by special Superintendents of Land Records and in the other districts by the local Superintendents. Owing to the breaking up of the old Ma-ubin-Pyapôn Survey Party at the end of last season, experienced and well trained hands were rendered available for employment elsewhere and readily found suitable work in other districts.

The resurveys which remained over from last year in the Pyapôn District, to which reference was made in the previous annual report, were undertaken by a remnant of the old Ma-ubin-Pyapôn Party. The work had to be taken in hand early in the open season in order that the Revision Survey Party which was operating in the district in the same year, might be provided with the requisite *kwin* traces in time for its work. The survey was in charge of Maung Pe Maung, Superintendent of Land Records, who maintained his good reputation in connection with these surveys. The work was finished in two months, December and January, and on its conclusion the staff was transferred to Pegu to augment the Revision Survey Party there. Field-work was started on the 2nd December. The detail surveyors first took up the *kwins* in which permanent survey marks had already been searched for during the previous season and completed the entire programme for the year by the 23rd January. The traverse section completed their work a week earlier. As the surveyors finished work they were sent in batches to Pegu for the surveys in that district. The staff was composed of 2 Inspectors, 2 sub-surveyors, 16 field-surveyors and 7 draughtsmen, computors and tracers. The tract under survey was situated in the Pyapôn and Dedaye townships. Owing to the difficulty experienced last year in the survey of *dani* gardens, steps were taken to have those for survey in the year properly demarcated in advance of the survey. This facilitated work. The traverse surveyors were employed in hunting up old permanent survey marks where needed and in replacing many of those which had been replaced by the Revision Surveyors which were out of position. They also traversed 5 island *kwins* which had not been provided with permanent survey marks at the time of the original survey. The mathematical results of the traverses were a correction of 2·8″ per station and 0·87 link per 10 chains of distance. The field-surveyors resurveyed 39 *kwins* wholly and 11 *kwins* in part. The part surveys were done on sectional sheets, where changes were numerous, and on printed sheets where only *kazin* corrections were required. The area resurveyed was 38,506 acres under occupation, or about one-half the total occupied area of the *kwins* dealt with. The average size of the field was 0·82 acre. The area actually surveyed was much in excess of the estimate, due chiefly to many of the *kwins*

proposed for partial revision having to be entirely surveyed owing to recent extensions and to certain sheets put down originally for patch-work survey being wholly surveyed. A better quality of work was thus secured at little, if any, increase in time or cost. Every sheet of the survey was checked by 'partals' by either or both the Superintendent and the Inspectors and the work is reported to have been very good. The Assistant Director inspected the field-work of the survey and found it to be of decidedly good quality. The health of the Party was remarkably good, which contributed materially to the successful completion of the work within the specified period. The cost of the operations amounted to Rs. 8,669. The cost-rate works out to 3 as. 7 p. per acre of cultivation. The recess-work relating to the survey is being carried out conjointly with that of Pegu District. The area statements required by the Revision Settlement Officer were sent to him early in the recess season. The Superintendent (Maung Pe Maung) has now had a large experience in this particular kind of survey and manages his surveys skilfully and well. This brings to a close the revision survey operations which have been in progress by the Party in the Ma-ubin and Pyapôn Districts for the past four years, in the two first of which the surveys were carried out under the supervision of the local Superintendent (Mr. Hardinge) and in the next two years by Maung Pe Maung.

The Pegu Revision Survey Party continued its operations in the district in the Pegu, Pyuntaza and Nyaunglèbin Townships. About one-half of the revisions fall in the last named township. The Party was practically the same as that of last year, except that it was slightly strengthened in February by the Pyapôn staff which came across on completion of their work in that district. Recruitment was almost entirely local. Actual field-work was commenced on the 4th December and had to be continued till the 10th June in order to complete the programme of the year, though finally owing to the break of the rains one *kwin* had to be left partly unfinished. The recess-work, however, was punctually taken in hand on 1st June. For the original surveys in the unsettled tracts of Paunggyi and Tandawgyi circles in the Hlègu and Payagale Townships of the Pegu subdivision a small squad of one Inspector, one sub-surveyor and 3 field-surveyors was employed for the last two months of the open season, and duly finished the work there. The full strength of the combined staff was 7 Inspectors, 5 sub-surveyors, 48 field-surveyors, 15 draughtsmen, computors and tracers, and one clerk, with the usual complement of menials. The traverse section was employed in hunting up old survey marks and putting down new ones where required. A very large percentage of old marks had altogether disappeared owing to the nature of the ground at the time of the first survey. But in places new stations were planted not very far distant from old marks which were still in existence. It is important that new stations alongside old traverse lines should be laid down as sparingly as possible and that careful search should be made for missing ones, otherwise marks are apt to be confused. The sub-surveyors retraversed 55 *kwins* with an area of 100 square miles, attended to replacements of marks in 82 *kwins*, ran 24 sub-traverses, and did the original traverses of 9 *kwins* with an area of 7 square miles in the unsettled tracts which remained over from last year. Sixty-six large *kwins* were sub-divided and formed into 157 smaller ones, the lines of subdivision following as much as possible village headmen's jurisdictions or natural boundaries. The cadastral section resurveyed 196 *kwins* with 204,200 acres under occupation, including 2 *kwins* of the previous season which were redone owing to faulty work. The average size of the field was 0·44 acre. In the unsettled tracts 27 *kwins* having an area of 14 square miles and containing 4,258 acres under occupation were also surveyed for the first time. The average size of the field was 0·32 acre. The revisions executed exceeded the estimate by 12 per cent., a fact due to extensions and in part to some additions being made where more *kwins* had become ripe for survey. The holding-marking was done by Burman Surveyors and Inspectors. The field-work was checked by 'partals' taken over every sheet of the surveyed *kwins* by either the Inspectors or the Superintendent. In many cases in the absence of 'purdahs' or sub-traverses and owing to the large size of the *kwins*, 'kutcha' or secondary 'partals' could alone be taken. The Assistant Director inspected the field-work and found it to be of good quality. The mathematical results of the traverses gave as the

angular error 6″·12 per station and in distance 3·48 links per 100 chains. For want of time verificatory azimuths were unfortunately not observed in the new circuits to check the angular work. The *kwin* traverses were, however, mostly connected by means of enclosed traverses with the older surveys and their geographical positions thus fixed. The Inspectors and surveyors as a class worked well; no cases of scamping or fudging of the work came to notice. Two of the field-surveyors resigned in the height of the field-season owing to the arduous nature of the duties assigned to them, but they were promptly replaced by others. The health of the Party was good till towards the close of the season when several of the staff were incapacitated for work by malaria. There were three casualties in the year; one chainman was accidentally drowned and another chainman and an apprentice surveyor died from malarial fever. The cost of the operations amounted to Rs. 48,730, giving a cost rate per acre of cultivation, for both revision and original survey, of 3 as. 9 p. per acre. The recess-work is in progress and is well advanced. The results of the season's work are excellent and reflect credit upon both the Superintendents in charge, Maung San Shwe, who held charge of the Party for the first two months of the survey year, and Maung Pe Maung who succeeded him and who is still in charge. The Party has now worked for two years in the district, and has completed the entire programme of revision and original survey work allotted to it. The total cultivated area surveyed in the two seasons was 345,281 acres or 11 per cent. over the estimate as revised. The work done was up to a professional standard, and the staff have worked and behaved in a most praiseworthy manner. The results achieved are remarkably good and all the officers who took an active part in the operations, *viz.*, Maung San Shwe, Maung Pe Maung and Mr. P. Beechey, Superintendents of Land Records, are deserving of commendation. At the conclusion of the recess-work it is proposed to transfer the Party at a reduced strength to complete in a single season the revision and original surveys which remain to be done in the Amherst and Thatôn Districts. The proposals have, however, not yet taken definite shape.

The four-year programme of revision surveys in the Amherst and Thatôn Districts which was commenced last year was continued in the year of report, but with slightly increased staffs. The order of revision and original surveys was somewhat modified in order to fit in with the five-year Settlement Programme.

In Amherst revisions in the year were carried on almost entirely in the Kyaikmaraw Township with small areas in each of the Chaungzon, Moulmein and Kawkareik Townships. The extensions in these tracts have been going on steadily till they have attained considerable dimensions, the cultivated area showing an increase since Settlement of 80 per cent.; the maps consequently required to be redone preliminary to resettlement. Under instructions from the headquarters office the surveys in the settled areas were first taken in hand and the staff then gradually worked outward into the unsettled tracts. The staff engaged on the work consisted of 2 Inspectors, 3 sub-surveyors, 12 field-surveyors, 4 draughtsmen and computors, and one clerk. Profiting by last year's experience a large proportion of the menial staff was imported from India. The superior hands were chiefly those who had worked the year before with some additions from the disbanded Ma-ubin-Pyapôn Party. Ten passed apprentices were attached to survey squads as tindals of the more experienced surveyors, with a view to a practical training in cadastral work. Field-work was started by due date, *i.e.*, 1st December; but had to be closed before the proper time, *viz.*, on the 20th May. The traverse surveyors worked partly in the settled and partly in the unsettled tracts. In the former area the work consisted chiefly of picking up lost stations in 14 *kwins* and laying down fresh sub-traverses where necessary, while 2 *kwins* were entirely retraversed, as all former marks had been lost. In the unsettled portion 36 new *kwins* were traversed, enclosed by a main circuit, and 40 subtraverses taken; the area of the traverses was 51 square miles. Verificatory azimuths were taken and the corrections applied to the angular and linear work were not large, the maximum being two minutes in a *kwin* for angles and one link in 10 chains for distances. The cadastral section first took up and completed the 10 *kwins* and 3 *dani* islands of the unfinished programme of

last year, and then 17 other *kwins* of this year's programme, after which 13 *kwins* of new cultivation, with an area of 18 square miles, in the unsettled tracts were done. Altogether 38,316 acres of cultivation of revision and original surveys were mapped. Operations in the new areas were not started till the first week in April and owing partly to sickness among the staff but chiefly to the unusual cyclonic weather and floods that prevailed practically throughout May, progress was seriously impeded and it was not possible to finish more than 13 out of the 36 *kwins* which had been traversed and plotted for the detail survey. It will be advisable to begin work earlier in the season next year in this particular tract. The detail surveys were well 'partalled' by the Superintendent and the Inspectors and in only two instances was it necessary to reject and re-do work. The Assistant Director examined the surveys on the ground in 3 townships and found it distinctly good all round, though it was, owing to the intermixed jungle, difficult in most cases. The health of the staff on the whole was unsatisfactory, 30 per cent. of the men being down with fever at the commencement of the season, and an apprentice surveyor died from this cause; two surveyors were seriously ill, but eventually recovered. The staff have worked well, particularly the Inspector who surveyed the new main circuit in addition to his other duties. The Superintendent (Mr. D'Souza) with his usual energy helped in the work in every direction. The cost of the operations amounted to Rs. 17,446; this gives a cost rate per acre of cultivation of 7 as. 3 p. which is comparatively high, but the surveys were by no means easy, fields were small, jungle in places was heavy and the work was scattered. The work of the recess is being proceeded with.

In Thatôn the surveys were chiefly in the Thatôn Township. Out of a total number of 90 *kwins* completely revised, 7 belonged to Kyaikto Township and 10 to Bilin Township, all 17 of which remained over from the revisions allotted to local surveyors in the year before. Surveys in the Paung and Pa-an Townships, the latter of which includes a large area for original survey, could not be done owing to the year's programme having been considerably enlarged by the addition of more *kwins* which it was found during the progress of work badly needed revision. Field-work began on the 1st December and concluded on the 31st May. The staff was slightly in excess of that of the year before, some men having been got over from the Ma-ubin-Pyapôn Party. The menial establishment was entertained locally. The staff employed consisted of 2 Inspectors, 2 sub-surveyors, 12 field-surveyors, 4 computors and draughtsmen and one clerk. The traverse surveyors connected up with the older traverses the new surveys of the previous year, which had been surveyed at the time independently of geographical points. The chief work, however, consisted in laying down the positions of lost survey marks, a large number of which were missing, in order to provide a sufficiency of points as a basis for the detail survey. The opportunity was taken to divide large and unwieldy *kwins* into smaller and more workable ones, and the necessary sub-traverses were run in connection with these. One of the sub-surveyors was employed for half the season in cadastral work to relieve the pressure. The field-surveyors completed the revision survey of 62,350 acres of cultivation with an average size of field of 0·72 acre. The area done was much above the estimate. Some of the surveyors worked indifferently and their services were subsequently dispensed with. There were a number of desertions among the chainmen working near the railway line where better wages, with lighter work were obtainable, and field-surveyors had in some cases to work short-handed for a time. The work was partalled throughout by the Inspectors and the Superintendent. The Assistant Director examined the surveys and found the work to be of very good quality. The Party kept good health all through the season. The cost of the surveys amounted to Rs. 16,854, which works out at 4 as. 4 p. per acre of the cultivated area. The Superintendent (Mr. Carrapiett) exerted himself to the utmost to get good and ample work out of the staff, and pushed the surveys on with vigour and success. He was helped in the field checking by the Probationer (Mr. McCann). The recess-work is in hand. There remain for resurvey 26 *kwins* in the Thatôn Township which must be taken in hand the first thing next field season, as they fall in the tract to be operated on by the Revision Settlement Party next year. As the Revision

Settlement programme includes the Paung and Pa-an Townships for Settlement in 1908-9, the surveys in these two townships must be completed next open season.

The surveys in the Hanthawaddy District outlined in last year's report were undertaken in the year by a special staff of 2 Inspectors, 2 sub-surveyors, 12 field-surveyors and 5 computors and draughtsmen. Most of the superior hands were taken over from the Ma-ubin-Pyapôn Party. The cultivated area surveyed was 88,169 acres, situated in the Kyauktan subdivision and in the Kungyangon Township of the Twante subdivision in which a revision of settlement is to be made next year. Traverse work started on the 1st November and the detail survey on the 1st December, both continuing without interruption till the 30th May, the close of the field-season. The sub-surveyors relaid theodolite stations where required, and ran sub-traverses in all cases where large *kwins* were split up into smaller ones. In some instances the detail survey was begun before the preparation of the 'kaka' or rough plans which should ordinarily precede detail work. The quality of the work was good but necessarily slow at the start. Numbered *kwin* traces required for the Settlement Party will be prepared during the recess. The health of the Party was good right through the season, and the outturn considerably over the estimate. The surveys were well checked by the Inspectors and the Superintendent. The Assistant Director examined the work and found it of good quality. The cost of the operations was Rs. 14,483; this gives the cost-rate per acre of cultivation at 2 as. 8 p. The Superintendent (Mr. Torrens) had a lot of work to do in organising the Party and starting the surveys. There is still three more years' work of resurveys in the district to prepare up-to-date maps for the Revision Settlement Party. Detailed proposals for the surveys still to be done are awaited from the local authorities.

Special surveyors were employed, as usual, in the annual resurvey of cultivation on island *kwins* in the districts of Mandalay, Sagaing, Lower Chindwin and Myingyan. The work was checked in all cases by the local inspecting officers. In Mandalay three surveyors were employed in the resurvey of impermanent island cultivation and of changes in the Mandalay Canal tract. They also with the assistance of three local surveyors cadastrally surveyed 8 *kwins*; the traverses of 7 of these had been previously done by the local Inspector. The 8 *kwins* lie within the limits of the Mandalay Canal system, and required revision badly in consequence of the topographical changes and expansion of cultivation brought about by the canal system. It is reported that this system, with its canal distributaries and net-work of water-courses, has so completely changed the entire area it commands, that a resurvey of all the *kwins* within it is imperative. The area involved is some 87 square miles, and it is proposed that this should be re-surveyed by special agency next year; but definite proposals have not yet been received. The area of impermanent island cultivation resurveyed for assessment purposes by both temporary and permanent surveyors was 13,466 acres. In Sagaing 6 surveyors completed in four months the survey of 24,178 acres of which 10,955 acres were cultivated, at a cost of Rs. 871. In the Lower Chindwin one surveyor surveyed 3,773 acres of which 3,548 acres were cultivated, in two months, at a cost of Rs. 100. In Myingyan 10 surveyors surveyed in three months at a cost of Rs. 1,490 an area of 19,462 acres of which 12,590 acres were assessed.

In view of the approach of a revision of Settlement in the Meiktila District, the local authorities were requested to have the *kwins* in which the maps were not up to date resurveyed. Accordingly, last season the local surveyors accomplished the resurveys of 6,941 acres of cultivation, while next season it is proposed to allot to them for survey 10,069 acres of cultivation in *kwins* which only require partial resurvey. In addition to the area to be resurveyed by the local staff, there are 47,553 acres of cultivation in *kwins* which require entire resurvey and 23,357 acres in *kwins* which require partial resurvey, all of which will have to be resurveyed by a special staff. The reasons for these resurveys are that extensions of cultivation since the original survey of 1890-5 have been continuous, the percentage of increase in respect to the occupied area proposed for resurvey by a special staff amounting to 30. Some of the original and settlement surveys were found incorrect, and these have been included in the present estimate of work to be

done. The surveys will be conducted by the local Superintendent of Land Records in addition to his ordinary duties. Proposals have been submitted to Government and orders are awaited. The operations, if sanctioned, are to be proceeded with in the approaching season.

On the recommendation of the local officers proposals were submitted for the resurvey of about 15,000 acres of cultivation in the Myingyan District by a small special staff working under the orders of the local Superintendent of Land Records next season. The revisions are necessary in consequence of the extensive changes that have occurred since the original survey in the aspect of the ground due to extensions and internal alterations of field boundaries. The locally framed estimate was slightly modified in this office, and now amounts to Rs. 5,340. Orders sanctioning the proposals have been received and the necessary steps will be taken for the prosecution of the work.

Extension Surveys.

4. The map and area work of the recess-season relating to the field-surveys executed in the Akyab District by special agency last year was duly completed, and the sheets printed.

During the year of report special, or extension, surveys by special staffs were undertaken in the Akyab, Kyaukpyu and Tharrawaddy Districts under the immediate supervision of the local Superintendents of Land Records.

The survey of cultivated blocks in the unsettled tracts of the Akyab District was continued by a staff composed of one Inspector, 2 sub-surveyors, 6 field-surveyors, 2 draughtsmen and computors and one clerk. This formed the second season of the four-year programme of work sketched out in paragraph 4 of last year's report. Operations were confined to the Myothit, Mingalagyi; Na-af, Alethangyaw and Myinhlut circles of the Maungdaw Township and the Angumaw Circle of the Rathedaung Township. Besides, there was for completion what remained over from last season's programme in the Kalapanzin Circle of the Buthidaung Township. Some difficulty was experienced in obtaining a suitable Inspector and sub-surveyors, but field-surveyors were readily procurable. Field-work was started early in December and was continued throughout the open season. The traverse section completed the traversing of 52 square miles, made up of 3 small circuits; and, in addition, did the retraverses in 7 *kwins* with an area of 10 square miles of last year's work and new traverses of 6 *kwins* with an area of 11 square miles; in all 73 square miles were traversed. The cadastral section surveyed in detail a total area of 34 square miles, containing 13,345 acres of cultivation, in 27 *kwins*. The field-to-field survey was confined as far as possible to the cultivated areas and unnecessary jungle was excluded from *kwins*, the proportion of cultivation to waste being as 3 : 2. The survey was difficult owing to the small size and irregular shape of the fields and to hills intervening. Jungle cutting for the traversing was heavy and the assistance rendered by villagers was very meagre. The staff suffered off and on from malarial fever throughout the season. Notwithstanding these drawbacks a good season's outturn was secured. The Superintendent (Mr. Korper) gave the survey every attention, and did all he could to make the operations a success. The *kwins* surveyed were thoroughly 'partalled' by the Superintendent and the Inspector and the work proved to be very good. The geographical fixings, and Great Trigonometrical connections were of a professional character, and verificatory azimuths were observed where required. The requisite holding-marking was done by the survey staff. The Assistant Director inspected the field-work and found it to be quite satisfactory. The cost of the operations amounted to Rs. 9,913. The recess-work is now in progress.

The proposals for the cadastral survey in two seasons of certain cultivated blocks bordering on the older surveyed tracts in the Kyaukpyu District referred to in last year's report were given effect to this year. The staff was locally recruited, but owing to the late receipt of surveying instruments from unavoidable causes traverse work could not be begun till the 24th November. Cadastral work was started punctually on the 1st December, and both sections concluded their field-work at the end of May. The staff consisted of one Inspector, 2 sub-surveyors, 4 field-surveyors, 2 draughtsmen and computors and one clerk. The area cadastrally surveyed was 20 square miles, containing 6,529 acres of cultivation, contained in 34 *kwins* in the Cheduba, Ramree and Kyaukpyu

townships. The progress of the survey was disappointingly slow at first owing to the hilly nature of the country and the defective demarcation alluded to in paragraph 2 which necessitated a good deal of fresh line-cutting by the field-surveyors; but as the season advanced and the survey was restricted to blocks of cultivation, as should have been the case from the commencement, work progressed more rapidly. No check azimuths were observed for the verification of the angular work of the traverses, as the new work bordered mostly on old work with which it was connected. The holding-marking was done by the special surveyors. The detail survey was well checked by the Superintendent and the Inspector. The cost of the operations was Rs. 9,190. The quality of the survey work as examined on the ground by the Assistant Director was good. The survey was no doubt difficult owing to its scattered nature and the difficulties of communication by both land and water. The recess-work is proceeding.

This was the first season of the two years' programme of original cadastral survey work sketched out for Tharrawaddy District in last year's report. The surveys in the year were carried on in the Taungnyo, Indaingbu and Shabinda circles of the Tapun township and in the Minhla and Lwinbyin circles of the Minhla township. The staff consisted of one Inspector, 2 sub-surveyors, 4 field-surveyors and 3 draughtsmen and computors. Owing to the late receipt of sanction there was some difficulty in engaging the staff and in starting the work in proper time. As it was the traverse work could not be begun till the end of November; the detail survey commenced early in December. In all 24 *kwins* were traversed with an area of 50 square miles, and 23 sub-traverses were run. The traverses were connected with adjoining main circuits of both Tharrawaddy and Prome Districts, and verificatory azimuths were observed at two stations. *Kwins* were large but this was unavoidable owing to much intervening high ground. The cadastral survey was confined to cultivation and the usual topographical features, but hills were excluded from survey their bases alone being mapped. The total area surveyed in detail was 43 square miles containing 9,148 acres under actual cultivation and about 1,500 acres of abandoned fields which had been left fallow owing in parts to want of rain and in parts to floods. The proportion of cultivation to waste was as 1 : $2\frac{1}{2}$. 'Partals' or check lines were taken over every sheet by the Inspector and over a large number of sheets by the Superintendent. The heavy line-cutting, the unusual rain in November and December and also the early rains of May, and much sickness among the staff impeded the surveys to some extent; but on the whole a good outturn of work has been secured. The holding-marking was done by the survey staff. The Assistant Director tested the field-work and rendered much assistance in the prosecution of the survey. The work was of decidedly good quality, though conducted under considerable drawbacks. The Superintendent (Mr. Ripley) gave the survey close attention though he had in addition a large Town Survey establishment to supervise and suffered from repeated attacks of fever due to exposure. The cost of the survey amounted to Rs. 8,788. The recess-work is now in hand.

Twelve small *kwins*, chiefly on the east bank of the Irrawaddy river in the Katha township of the Katha District which had been left unsurveyed by the Special Survey Party which operated in the district in 1904-5, were cadastrally surveyed by 2 extra surveyors on the permanent local staff. The classification of the lands, with a total area of 330 acres only, was done at the same time. The work lasted from March to May. The survey and classification are reported to have been satisfactorily completed.

The Assistant Director personally instructed the Superintendents and selected Inspectors and surveyors of the various special and revision survey parties in the observations and calculations for azimuth, latitude and time, with a view to securing proper checks on the angular work of the traverses and proper geographical fixings of the surveys, and helped generally with his advice and instruction.

5. The work of demarcation and survey of all important provincial towns which was inaugurated two years ago was proceeded with as far as practicable in 19 districts during the year. The surveys undertaken are throughout on a

Town-Surveys. Statement IV.

uniform scale of 64 inches to the mile. The connected work of tenure enquiry and the subsequent preparation of the town lands rolls was also got on with so far as possible in 8 districts. The surveys previously done, in whole or part, related to the districts of Akyab, Kyaukpyu, Pegu, Ma-ubin, Pyapôn, Bassein, Toungoo, Thatôn, Amherst, Tavoy, Mergui, Minbu, Magwè, Mandalay, Katha, Shwebo, Sagaing, Meiktila and Yamèthin. In some of these further work was done or is proposed to be done later on. In all, 17 Demarcation Officers were employed in the year on demarcation work in 41 towns, for periods varying from two to nine months. The demarcation of towns in the Upper Chindwin was done by the respective Subdivisional Officers, and that of Nyaung-u town in Myingyan by the Township Officer. The total area demarcated was 58·25 square miles, at a cost of Rs. 16,351. Surveys were conducted in 42 towns altogether; in 31 of these theodolite traverses were made in advance of the detail survey, in the other cases the traverse work was either previously done or was undertaken by local surveyors at no extra cost, or as in the case of the Upper Chindwin, not done at all. The number of sub-surveyors employed on the advance traverses was 13 for periods varying from one to seven months and the total area traversed was 48·66 square miles. For the cadastral survey 6 Inspectors, 47 field-surveyors, and 20 draughtsmen and computors were employed for varying periods extending from 2 to 7 months, and the total area mapped was 50·92 square miles. For the map and area work of the recess season 36 men were engaged, for periods of from 2 to 6 months. The entire cost of the survey operations of the year, for both field and office work, amounts to Rs. 34,431. Under recent orders the cost of these surveys is to be borne solely by Provincial Funds, on the ground that the advantages to Government from town surveys will be far greater than those accruing to local bodies. Particulars of the work of demarcation and survey executed in the year are given in Statement No. IV.

In Akyab the maps of Akyab town were revised in 1905-6, but operations under the Burma Boundaries Act are not to be undertaken until next field season when the maps will again be revised wherever necessary, but this work will not be extensive. The town surveyor is engaged meantime in preparing the town lands roll from all available sources. In Rangoon Town the Bahan quarter was demarcated with a view to eventual survey on the 100 feet scale on which the adjoining lands have already been mapped. The survey of towns in Hanthawaddy was deferred owing to heavy revision surveys being in progress in the district. But on account of urgency the demarcation and survey of Syriam Town was proceeded with and successfully accomplished notwithstanding that sanction was only received on the 19th April 1907. In Tharrawaddy the demarcation and survey of the towns of Nattalin, Zigôn, Gyobingauk, Ôkpo, Othegôn, Minhla, Sitkwin, Letpadan, Zibyugôn, Inywa, Tharrawaddy and Thônzè were completed. The work was well partalled and two check azimuths observed. The Superintendent, Mr. Ripley, deserves credit for this excellent outturn, as hel had special extension surveys in hand at the same time. The recess-work is proceeding. In Prome the towns of Paungdè, Shwedaung, Padigôn, Thegôn, Sinmizwe, and Hmawza, were demarcated and surveyed. The advance traversing of Prome town was also done towards the close of the open season, but the detail survey can only be taken up next year. The town of Prome was originally surveyed on the 50 feet scale by local agency in 1895-6, but owing to the great changes that have occurred in the aspect of the land since then it was considered advisable to resurvey the town on the standard scale. The opportunity will also be taken to prepare the map by wards instead of by circles as was done before. The surveys done in the year were well partalled, and the Superintendent, Maung Ba On, is to be commended for his vigorous prosecution of the work. The recess-work is in progress. The town lands rolls have not yet been started, and a special officer has been proposed for the tenure enquiry. In the Municipal towns of Paungdè and Shwedaung the permanent survey marks have been protected by small brick pillars built round the pipes and flush with the surface of the ground at the cost of the Municipality. The three towns of Yandoon, Pantanaw and Sagagyi of the Ma-ubin District, which were left over from last season,

were demarcated and surveyed. The work was well checked and on the whole well done, the Superintendent, Mr. Cooper, having exerted himself to the utmost to get the work through in the season. An outbreak of cholera and plague in Yandoon retarded the work there somewhat, but lost time was afterwards made good. In this town there are considerable areas of ordinary agricultural lands which had better be excluded from the large scale survey. Only residential sections or those likely soon to be taken up for habitation should be surveyed on the large scale. The tenure officers are still engaged in enquiring into and settling disputes in connection with boundaries especially where roads, as in Yandoon, are being arbitrarily widened, and also in revising and issuing new grants. The preparation of the town lands rolls can only be begun on the completion of the tenure work. The demarcation and survey work in Pyapôn District was finished last year, except as regards the detail survey of Bogale town which was done this year. The respective Township Officers have the work of the town lands rolls relating to Bogale, Dedaye and Kyaiklat well in hand, while the rolls for Pyapôn remain for completion in part. The Zalun town of the Henzada District was demarcated and surveyed in the year, and the recess-work is now in hand. In Myaungmya the towns of Myaungmya and Moulmeingyun were demarcated and surveyed. The Township Officers are engaged in the preparation of the town lands rolls of Einmè, Wakèma, Thayetkôn and Shwelaung which were surveyed the year before. The supplementary survey staff was employed to divide up available blocks which were likely to be required as building sites. In Thatôn the towns of Thatôn, Pa-an and Hlaingbwe were down for survey in the year, but only Thatôn town was demarcated and surveyed. The work was both slow and costly, and better results should have been forthcoming. The quality of the work was good, the angular error of the traverses being 20 seconds per station and in chaining less than a link in 10 chains, but for large scale work the linear error should have been smaller. The town lands roll has been completed. The area of the town was curtailed, under the orders of the Financial Commissioner, the hill range on the east and the purely agricultural lands on the south which had been previously mapped on the 32-inch and 16-inch scales respectively being excluded from survey. It is proposed to do the survey of the new railway towns of Martaban, Hninpale and Sittang before the other two towns of Pa-an and Hlaingbwe which remain over for survey. I think it would be better to finish the programme already laid down before commencing new work. The new railway towns are only in process of formation and it would be better to lay them out properly first and survey them afterwards. The Superintendent (Mr. Carrapiett) gave the work as much attention as he could, with *potta* and revision surveys also in hand. The proposed demarcation and survey of Amherst town in the Amherst District was postponed to next season owing to the late receipt of sanction. The question of the demarcation and resurvey of Moulmein town is under consideration. The town was surveyed in part on the 50 feet and in part on the 100 feet scale by the Survey of India Department many years ago. The maps are excellent ones and the changes that have occurred since the original survey could be readily brought on to them by a small special staff. The survey of Tavoy town in the Tavoy District was done before, but it is now proposed to re-demarcate the house-sites in certain parts by placing demarcation pipes outside of, instead of as now inside, fences. It is hoped by doing this it will be easier to detect encroachments on the Municipal roads which are reported to be considerable. The demarcation and survey of Mergui and Palaw in the Mergui District were completed last year, except in respect to a small portion of Mergui town in which the demarcation and a revision of the survey were done during the year. The quality of the work was not very good. The town lands roll of Palaw is finished but that of Mergui is still in hand though approaching completion. The work of re-arranging the leases of house-sites of the four towns surveyed last year in the Minbu District has not yet been completed owing to a change in District Officers. In the Magwe District the survey of Taungdwingyi town was done, and the town lands roll of Yenangyaung finished but not that of Taungdwingyi. In Mandalay the towns of Mandalay and Maymyo were previously surveyed, but the proper demarcation of the area in the Mandalay town which has been surveyed by the Town Survey staff

without demarcation since the year 1902, was undertaken in the year; the work is still in progress. In Katha the maps and connected registers of Katha and Wuntho towns which were begun last year were completed this year. Similar work in Kawlin town is in hand. The work is being done by the Town Lands Surveyor. In Sagaing the towns of Myinmu and Tada-u were surveyed. The survey was based on existing smaller scale theodolite traverses; Myinmu was surveyed by a special surveyor and Tada-u by the local survey school pupils; the work is described as good. Better results are, however, obtainable with traverses and sub-traverses specially suited to large scale surveys. Traverses intended for smaller scale surveys do not provide a sufficient number of starting and closing points and interior connections where every link of measurement has to be accounted for. The survey of Mônywa and Alôn in the Lower Chindwin District has not yet begun, though the demarcation has been completed. Some difficulty was experienced in getting suitable surveyors. The work will have to be done next year. In the Upper Chindwin only a plane-table survey was undertaken and the towns of Mingin, Kalewa and Kindat completed, while Homalin town approaches completion; no theodolite traverse was done, owing it is alleged here too, to the want of a proper surveyor. Work has suffered for want of supervision, and the surveys are probably not very reliable though they may prove serviceable for rough and ready references. Large-scale town surveys, where so much minute and accurate detail is required, should not be attempted until the proper theodolite traverses and subsidiary lines have been laid out. The town lands rolls of the first named three towns have been prepared. In Yamèthin, also, there is not much progress to record. Here a staff composed of one sub-surveyor, two field-surveyors and two draughtsmen and computors were employed for two months in an attempt to survey the town of Pyinmana. Work was then stopped owing, it is reported, to want of Survey of India traverse data. Timely arrangements should have been made to procure the required data which are after all not an absolute necessity, and in the absence of them independent traverses should have been made in the course of which as many of the old stations as were found should have been picked up. Proper arrangements for the survey should be made next year, both for the advance traversing and the subsequent detail work. The town lands rolls of the three towns of Pyawbwe, Yamèthin and Ela which were surveyed last year are completed, but proposals for the resurvey of these towns next year are to be made on the ground that previous surveys are faulty. In the Myingyan District the demarcation of Myingyan town was attended to by a special officer and that of Nyaung-u town by the Township Officer. This survey has been well executed and the detail work has been carefully checked and found to be of very good quality. The angular error of the traverses was 30″ per station and in chaining 0·05 link in 10 chains. The subsequent mapping and area work has been completed. Credit for this work is due to the Superintendent, Mr. McKertich, who has since been transferred to Bassein. The tenure enquiry has now been started, and the town lands roll will have to be taken up afterwards. In the Pakôkku District the town portion of Pakôkku town was surveyed on the 64″ scale and the civil station on the 16″ scale by the survey of India Department in 1902-03. In the year a small staff was engaged on the demarcation of the entire town, the revision survey of the town area, the 64″ survey of the civil station and the preparation of the town lands rolls. The work was defective and much has still to be done; it has been arranged that it should be continued under the guidance of the Superintendent of Land Records, Magwe, as there is no Superintendent of Land Records in Pakôkku. It is unsatisfactory to have surveys of this description done except under the supervision of a competent survey officer. The demarcation and survey of Mogôk town in the Ruby Mines District have been postponed to next year owing to material alterations which are to be made in the configuration of the town by the Burma Ruby Mines Company, Limited. The demarcation and survey of Bhamo town of the Bhamo District has also been postponed to next year owing to comtemplated changes in the place and to a lack of surveyors. In Shwebo traces were prepared of the maps of the 17 towns surveyed in the previous year and sent to the Press to be printed. The surveys here, as in Sagaing, were not based on special traverses but merely connected with survey stations of the 16″ surveys of the adjoining

kwins. In Thayetmyo a map of Allanmyo town had been prepared by enlargement from the old 16″ map. This was examined on the ground by the Assistant Director and condemned as worthless. The only object of having maps on the 64″ scale is to secure absolute accuracy, and the method of enlargement is quite uncanonical; it would be quite unsafe to base any prosecution for encroachment on such a map. A large-scale map is also urgently required for Thayetmyo town for the preparation and maintenance of the town lands roll and other purposes. The Assistant Director took the opportunity of going into the question of the proper demarcation and survey of both the towns referred to and has formulated a scheme of work which has now been sanctioned by Government. With few exceptions the surveys of the year have been well conducted and thoroughly 'partalled' by the Inspectors and Superintendents responsible. To be of real use the maps turned out must be free of all blemish, and it is hoped this principle will be borne in mind by all officers who are associated with town map-making. The recess-work consisting of the completion of the maps prepared in the field-season and the extraction of areas is in progress for most of the districts. The Assistant Director examined the map and area work during last recess of the surveys of the previous field-season relating to the districts of Pegu, Pyapôn, Amherst and Thatôn. The map work of Pegu was of speciallygood quality, as was also that of Pyapôn; the work in Amherst and Thatôn was good. In Pegu 17 towns were surveyed last year, while the important town of Pegu was completed the year before. Hlègu still remains to be done, and proposals for the demarcation and survey of this town, which is of considerable size, are awaited. The Superintendent, Mr. Beechey, deserves praise for the heavy and excellent town surveys executed under his supervision. During the open season of the year of report the Assistant Director inspected field-work both of demarcation and survey, in respect to Thatôn town in Thatôn, to Nattalin and Gyobingauk towns in Tharrawaddy, to Yandoon and Danubyu towns in Ma-ubin and to Shwedaung town in Prome. The quality of the work was everywhere good. The Assistant Director helped forward with his advice and instruction the various town surveys executed in the year with a view to securing first class work.

Fishery Surveys.

6. The work of demarcation and survey of fisheries by special staffs in the Ma-ubin and Pyapôn Districts was continued in the year. The surveys were made on the 8″ scale in Ma-ubin and reduced to the 4″ standard subsequently, and on the 4″ scale in part in Pyapôn or by reduction from published 16″ sheets.

In Ma-ubin there were for demarcation 31 fisheries in the Yandoon Township and 232 fisheries in the Ma-ubin Township. On these a Demarcation Officer was employed from November to April inclusive, and completed the demarcation of all but 6 'Kadôn' fisheries which do not require demarcation. The survey of all the fisheries referred to was executed by a staff of one Inspector and 6 surveyors. The work began in December and was concluded in May. The entire programme of fishery surveys in this district has now been completed. The work of reducing the maps to the 4″ scale with a view to eventual publication is in progress. Traces of the maps for the fishery proceedings are also being prepared. The Inspector checked the survey of 178 fisheries while the Superintendent and the headquarters Land Records Inspector checked 32 fisheries. The survey work is pronounced to have been generally satisfactory. The success of the work is due in great measure to the care and attention bestowed upon it by the Superintendent (Mr. Cooper). The cost of the entire operations, both demarcation (Rs. 1,152) and survey (Rs. 6,098) with the connected mapping, came to Rs. 7,250

In Pyapôn there were 192 fisheries for survey, situated in the Kyaiklat, Pyapôn and Bogale Townships. Only 174 required demarcation, the remainder having been done in the previous season. Owing to delay in sanction demarcation did not begin till the 19th December. Two Demarcation Officers were employed on the work, and are stated to have worked with the *kwin* maps of 1905-6, and as each fishery was demarcated they prepared plans on the 4″ scale showing the locality of the screens and demarcated posts; these were used as guide maps by the survey staff. A fresh set of the published sheets should have been made use of for the purpose and not the supplementary survey *kwin* maps. The health of one of the Demarcation Officers broke down and it was not till a month later

that a substitute could be found. Demarcation closed on the 31st May. Owing, it is reported, to the unhealthiness of the tract, the extent of the fisheries, the untimely rain and the late receipt of sanction, the programme of work could not be finished and there is still a balance of 47 fisheries undemarcated. The cost of the demarcation work was Rs. 1,332. The survey of fisheries occupied the same period as the demarcation, *viz.*, about $5\frac{1}{2}$ months. The staff employed consisted of 2 Inspectors and 12 surveyors. The surveys were done on a set of fresh printed 16-inch sheets of the *kwins* in which the fisheries fell, the permanent boundary marks and demarcation posts being plotted on the maps from measurements made on the ground by plane-table, the demarcation maps being used as guides. The prismatic compass was used in parts of 4 fisheries only which lay outside of the Supplementary Survey tracts. Altogether only 61 fisheries were surveyed, their average length being given at 13 miles. This leaves 131 fisheries still to be surveyed. Even allowing for the difficulty of the work and the amount of line-cutting to be done, as also the sickness among the staff owing to the unhealthiness of the tract, the outturn is quite inadequate and shows want of proper supervision on the part of the Superintendent (Mr. Purchase). The Inspectors are said to have checked the survey in each fishery; but, as far as can be gathered from the report, the Superintendent did no checking himself. The cost of the work, including the subsequent mapping, amounts to Rs. 7,431. The local officers propose to complete the balance of the demarcation (47 fisheries) and survey (131 fisheries) next season by employing a single Demarcation Officer with one surveyor to reduce the 16-inch maps to the 4-inch scale and mark on these by approximation the limits of the fisheries and of fixed obstructions. This procedure would be quite unprofessional; it is important that the positions in question should be correctly delineated on the fishery maps, and for this purpose a staff of surveyors will be required to work on the lines of last season, but it is to be hoped not at their rate of progress.

In Mandalay one large fishery in the Singu Township was split up into three smaller ones, and after proper demarcation, these were surveyed by the local surveyor. The cost of demarcation was Rs. 60.

Potta Surveys.

7. During the year the issue of grants was discontinued in the Pa-an subdivision of Thatôn District, though the survey work of the year related to that division. The suspension of the grant system is also contemplated in the remote tracts and in the areas subject to inundation or erosion in the Amherst, Thatôn and Toungoo Districts. In my opinion it is unlikely that there will be a greater increase of cultivation if *pottas* are suspended than there is at present, as people now have the right of cultivating as squatters should they desire to do so; but it is most desirable that pending *pottas* should be disposed of before fresh applications are entertained. In the districts of Pyapôn, Toungoo, Thatôn and Amherst the special establishments employed on the survey of *pottas* were on regular pay; in the other eight districts the surveys were executed on the piece-work or contract system. The periods of work varied, extending from about four to eight months in the different districts. The staffs at work consisted of 12 Inspectors and 87 surveyors, but in only five districts were special Inspectors employed; in the rest of the districts the local Land Records Inspectors were responsible for the checking of the surveys. The whole of the operations in a district were supervised by the Superintendent of Land Records, who also checked the field-work as far as possible. The total number of cases dealt with was 5,423, and the area surveyed was 53,123 acres. The cost of the surveys amounted to Rs. 26,318. Establishments were as a rule punctually paid, except in Mergui, where delay in payment of a portion of the staff working at the contract rate occurred. This delay was due to the failure of the Township Officers to verify the plans of the lands and furnish the certificates necessary before payments can be made under the rules. The grants issued were for purposes of paddy cultivation chiefly, but also included a lease for rubber cultivation to a European firm in Toungoo, and several tin-mining leases in Mergui. In Tavoy a number of applications were made in the year for grants or leases for rubber cultivation. In Hanthawaddy grants are no longer

issued, but a few leases for house-sites were given out. In Mergui a special staff of surveyors will be required for duty next year solely for the survey of blocks in connection with tin-mining leases. In Mandalay *potta* surveys by piece-work were discontinued last year and all subsequent leases were surveyed by the regular staff; the amount realized in fees in the year was Rs. 190, which was credited to Government. In Mergui also fees were collected in cases where the surveys were executed by the regular staff; the procedure is wrong. The total fees realized in all districts amounted to Rs. 31,822, at the rate of annas 8 per acre, except in Thayetmyo, where the rate was annas 6 and in Tavoy where a special fee was paid for the survey of a large grant for rubber cultivation. In all but two cases the fees covered the cost of the surveys; the exceptions were Thatôn and Amherst, where part of the fees on account of work done this year was paid in the preceding year. The largest issues of grants occurred in the districts of Toungoo, Amherst, Kyaukpyu, Myaungmya and Thatôn. Practically all the cases for disposal have been cleared off except in Pyapôn, Thatôn and Amherst, where delays in surveys were caused partly by the late receipt of sanctions and partly by a rush of applications towards the close of the open season. In Pyapôn the work of the staff was inadequate. In Toungoo there were a large number of pending applications which were all disposed of in good time. The demarcation in all districts was done by applicants themselves, and is reported to have been good on the whole, but it was defective in places in Pyapôn. The surveys were well checked by the inspecting and supervising officers and also by the *potta* Myoôks where employed and were generally found to have been well done. In Myaungmya, however, the survey work was in several cases faulty and the staff were punished for this by being paid at half the fixed rates. Special *potta* Myoôks were at work for the disposal of *potta* cases in Toungoo, Thatôn and Amherst, *viz.*, one in Thatôn and two each in the other two districts. All these officers worked hard and well, as also did the Township Officers in Amherst who materially helped in the disposal of *potta* cases. A special *potta* Myoôk will be required for work in the Mudôn and Kyaikmaraw Townships of the Amherst District next open season to clear off arrears of cases in those townships. In Toungoo the survey work was successfully carried through, for which the Superintendent of Land Records, Maung Kyi O, deserves credit. The Superintendents of Land Records of Thatôn and Amherst, *viz.*, Messrs. Carrapiett and D'Souza, are also deserving of praise for the manner in which they looked after their *potta* surveys, notwithstanding their heavy work in connection with special surveys.

Area under and cost of Supplementary Survey, Statement I.

8. The total area under supplementary survey was 47,470 square miles, showing an increase over last year of 3,818 square miles. Of this increase 3,680 square miles are in the Shwebo District, in which a regular Land Records staff is now at work, Settlement operations having been completed. In Katha the addition of 74 square miles is due to the extension surveys completed by a local agency party in 1904-5, which, after settlement, have only this year come under supplementary survey. In Meiktila 61 square miles of the Samôn Valley tract which were recently surveyed by plane-table only and summarily settled have been added in the year. An area of 35 square miles of the Myotha Township of the Sagaing District was transferred to the Myingyan District and 3 square miles of island formations from Myingyan to Pakôkku District which is now under settlement. In Thatôn 18 square miles were lost by further sea erosions in the Kyaikto subdivision, in respect to which the Commissioner remarks as follows: "It is hoped that a period has at last been put to the rapid erosion of the last few years, the sea having reached the laterite beds. In one tract on the coast below Kyaikto there is some reason for the belief that the sea has at last commenced to recede." The variations for other centres are unimportant, the additions in Tavoy and Mergui being due to previous local surveys of which the printed maps were only available in the year, while the additions in the Upper Chindwin and Kyauksè are attributable to extension surveys undertaken by the local staff. The areas of Rangoon and Mandalay Towns are excluded from the total area, for though Land Records establishments are maintained in them their duties are different from ordinary Land Records work.

The total assessment of the year amounts to Rs. 2,54,81,253, which is an increase of Rs. 5,22,080 as compared with last year. Of this sum over two lakhs refers to the Shwebo District alone of which the figures have been for the first time included in the statement; the assessment, however, refers merely to the Shwebo Canal tract and to the assessment of areas declared State by the Settlement Party and of leased areas, and excludes the areas independently assessed by Township Officers and *thugyis*. The steady expansion of cultivation, diminution of fallow and the assessment of time-expired grants have contributed in most districts to the increase in the revenue. The other districts in which the principal increases occurred are Ma-ubin (Rs. 2,07,000), due mainly to an enhancement of rates the result of revision settlement in the Danubyu, Yandoon and Pantanaw Townships; Kyauksè (Rs. 1,52,000), owing to the imposition in the year of revised rates on a revision of settlement of the entire district; Henzada (Rs. 1,21,000), owing in part to the imposition of the maximum rates of assessment in the Henzada and Zalun Townships and in part to extensions of cultivation; Pyapôn (Rs. 87,000), Bassein (Rs. 36,000), Pegu (Rs. 58,000) and Toungoo (Rs. 62,000), due mostly to extensions; Tavoy (Rs. 69,000), owing to the application of new Settlement rates; Mandalay (Rs. 36,000) owing to improved irrigation and application of new Settlement rates, and exclusive of about half a lakh of revenue excluded under orders, on account of water-course construction in the Mandalay Canal area, and Akyab (Rs. 27,000), due in a great measure to the area brought under supplementary survey for the first time. There were also considerable increases in revenue in Thatôn and Amherst, due to extensions, the falling in of *pottas* and less fallow; smaller increases from the same causes are recorded for Katha, Sandoway and Mergui Districts. In the Lower Chindwin the increase in revenue was due to a more favourable season and in Kyaukpyu to the application of enhanced rates in the newly settled tracts in the An and Myebôn Townships. On the other hand, there were large decreases in Magwe (Rs. 1,09,000), Myingyan (Rs. 78,000), Meiktila (Rs. 97,000) and Yamèthin (Rs. 39,000) owing to unfavourable weather conditions and consequent decreased cultivation and cropped areas; Hanthawaddy (Rs. 99,000): this decrease is more apparent than real as this year's figures show the net demand while last year's figures represented the gross demand before remissions; in Minbu (Rs. 52,000) owing to destruction of *kaing* crops by insects; in Sagaing (Rs. 32,000) owing to the transfer of a large area to Myingyan and in Tharrawaddy (Rs. 39,000) owing to considerable fallows for want of rain in Tapun Township and to floods in the riverine tracts; also smaller decreases in Myaungmya, Prome and Thayetmyo owing to a variety of causes.

The total cost for supervision amounts to Rs. 4,44,146 and for survey to Rs. 7,28,506, in all Rs. 11,72,652. This is in excess of last year's total by Rs. 1,00,785, due in a measure to an increase of establishments and to a slight improvement in the rates of pay and travelling allowance of the superior staff, but chiefly owing to the inclusion for the first time of the Shwebo District in the statement on the withdrawal from the district of the Settlement Party to which the Land Records establishment was formerly attached. The subordinate establishments of the Prome, Ma-ubin and Pyapôn Districts were augmented by an Inspector each, and additional surveyors were given to Magwe, Prome, Mergui, Katha, Mandalay and four other districts, while there was a reduction in the number of surveyors in Sagaing. The cost per square mile in the year was Rs. 24·71 and per cent. of the assessment 4·60; in both cases the rates are slightly higher than the corresponding rates quoted last year. The cost was higher in the generality of districts for the reasons previously assigned, while the extension of areas under supplementary survey helped to reduce the cost-rate in the districts thereby affected. In Yamèthin the cost was higher owing to the appointment of a more senior Superintendent, while in Thatôn and Bassein it was lower owing to the appointment of more junior Superintendents; in Sagaing the reduced rate was due to a reduction in the number of surveyors. The only districts in which the cost rates are very high are Mandalay, Kyauksè, Sandoway, Upper Chindwin and Tavoy, and this is attributable to the comparatively small areas under supplementary survey; the cost rate in Pyapôn is also high. There were marked increases in the cost per cent. of the assessment in Magwe, Myingyan, Meiktila and

Yamèthin owing to an unfavourable season, in Minbu owing to the destruction of island crops by insects, in Upper Chindwin owing to the enhanced cost of establishment and in Thayetmyo owing to the relinquishment of temporary '*yas*' and there were marked decreases in Kyauksè and Tavoy due to a large increase in the revenue from settlements.

Submission of Assessment-rolls.

9. The assesment-rolls were submitted late in 8 Lower Burma Districts as against 11 last year. In Rangoon Town the rolls for the area transferred from Hanthawaddy District were a month late owing to the extra work thrown by the transfer on the staff which remained the same as before.

In Upper Burma the whole of the rolls for the year were submitted punctually in Meiktila, Minbu and Sagaing as against only two districts last year. Again the most serious delays were in Magwe where the sanctioned increase of establishment has not had time to effect an improvement. In Shwebo the *kaukkyi* rolls in the canal area were delayed 15 days owing to assessment rates being revised late in the season. In the Lower Chindwin all rolls were in time except those of one surveyor who fell sick. In Kyauksè the *kaukkyi* rolls were delayed 12 days by deaths of surveyors from plague.

Offices and Record-rooms.

10. The maintenance of the Register of transfers and changes (Register IX, Lower Burma, and VIII, Upper Burma) by headmen has improved generally. In Magwe there is said to be a marked improvement, in Mandalay the work is generally well done and in Minbu the obligation to report is being understood. In Pegu the persistent efforts of the past year have resulted in a 10 per. cent increase in the transfers reported. In Shwebo the register was not maintained at all by headmen in the year under report, but mutations were recorded by surveyors; steps have now been taken to supply the registers to headmen.

In Meiktila an office is provided at the headquarters of townships for the Inspector and his staff; elsewhere these have to provide office room in their own or rented houses. The accommodation is said to be improving but it is still only what can be expected from the small means of the surveyors, inadequate because cheap. In each of the districts of Magwe, Ma-ubin, Minbu and Prome an office was burnt down and Government property destroyed, though the maps and registers were saved. In Pyapôn an office was burnt but the maps and registers escaped. In Tharrawaddy two offices were burnt, in one the records were saved but in the other nearly all were burnt, together with the whole of the surveyor's property. In a fire at Maukkadaw, Upper Chindwin, a considerable amount of Government property, furniture, instruments, forms, stationery and registers was lost. All the *kwin* maps and all area statements but one were saved by the surveyor who lost all his own property. An extra surveyor was required for three months to rewrite the lost registers. In Pegu it is remarked as an unusual occurrence that no office was burnt down during the year. In Katha one office was flooded and the records soaked, but apparently not destroyed. In Magwe the records of the current year at Migyaungye were found one morning torn up in a Pegu jar outside the office. After all possible reconstruction register 1A of 26 *kwins* and maps of 12 *kwins* were missing. The perpetrators of this piece of mischief have not yet been traced, but the surveyor, who had not locked up these records, was punished by removal. The surveyor of Danbi West in Henzada destroyed all his maps, registers and area statements and received the lenient punishment of removal. These offices were frequently and thoroughly inspected throughout the year, and a steady improvement is reported in consequence.

The new record rooms were occupied during the year at Akyab and Pyapôn, while that at Sagaing was completed. Proposals for a new one at Moulmein are under consideration. Improvements to the racks were made at Pegu while proposals for the same at Kyaukpyu, Ma-ubin, Mergui, Tavoy and Toungoo are being considered. At Yamèthin more map tubes were needed to complete the arrangement of maps. In Rangoon separate accommodation has not yet been provided for the supplementary survey records; the assessment-rolls alone are kept with other district records in the general record-room, while other records are kept in the office. In the Upper Chindwin the records were removed

from Mingin and arranged at Kindat, the district headquarters. In Shwebo, as charges have been newly formed and are likely to need revision, the arrangement of records is tentative. In Mandalay the renumbering of *kwins* having been completed, the consequent rearrangement of records was in progress. At Maubin, the rearrangement of the record-room, consequent on the removal of the Pyapôn records to Pyapôn, was completed.

The Director, Deputy Director and Assistant Director inspected the headquarters offices and record-rooms in 26 districts and found them to be in good order.

Maintenance of the survey.

11. In Akyab four *kwins* with a total area of 910 acres and 1,847 acres of grant land were resurveyed by the local staff and 1,072 acres of grant land by a special surveyor. The resurvey of 28 *kwins* with an area of 7·33 square miles remains to be done by the local staff, while a special staff will be required for the resurvey of 129·66 square miles in 135 *kwins*. In Hanthawaddy 150 *kwins* with an area of 16,518 acres were surveyed by local agency, and the quality of the work pronounced to be very fair. In Pegu the demarcation of the Kyauktaga grant of some 30,000 acres with iron posts was carried out at a cost of Rs. 2,682-6-0 which was borne by the grantee, thus finally and amicably settling a long standing dispute between Government and him. It is satisfactory to note that three-quarters of the boundary posts were fixed trigonometrically and connected with Survey of India stations. In addition 109 *kwins* aggregating 34,656 acres were resurveyed and the work in most cases was passed as first class. It is hoped to bring 115 *kwins* with an area of 43·5 square miles up to date next year by local agency. In Tharrawaddy the area surveyed by the local staff was 11,045 acres and in Prome 10,773 acres in 33 *kwins*, with a gross area of 26,042 acres. In the latter the work was well reported on except in one *kwin* which had to be rejected, and it is hoped that the survey will be up to date by the next revision of settlement. In Pyapôn 1,463 acres of large extensions were surveyed. In Bassein two entire *kwins* and portions of five others will need resurvey by the local staff in the next five years. In Henzada 20,770 acres in 40 *kwins* were resurveyed by local agency and the work found to be of excellent quality. Revision survey will be needed in 82 *kwins* before the revision of settlement. In Myaungmya 16,371 acres were resurveyed in 82 *kwins* and in Toungoo 7,497 acres in 102 *kwins*, besides 11,224 acres of large extensions, and the work is said to be of good quality. In Thatôn an area of 21,526 acres of cultivation was thoroughly revised in 182 *kwins* besides the survey of 9,438 acres of large extensions, 3,164 acres of grants and the holding survey of 1,888 acres in the unsurveyed tracts; the work is modestly described as somewhat satisfactory. The Commissioner commends the work of Mr. Carrapiett. In Amherst 14,034 acres were resurveyed in 45 *kwins*, and in Tavoy small and scattered areas aggregating 261·27 acres in 59 *kwins*. In Amherst the work of four surveyors had to be rejected, while severe measures were taken against a fifth who had employed an Indian "Amin" and a "Tindal" to do his work for him. Mergui needs only two *kwins* to be resurveyed by the local staff next season to bring the survey up to date.

In Magwe new surveys were made of 7,640 acres and 11,978 acres were resurveyed. In Mandalay an area of 458 acres outside the limits of supplementary survey was surveyed and the revision of 12,117 acres in the canal tract brought the survey up to date for assessment purposes. In Katha 1,926 acres of extensions were surveyed and in Shwebo maps were brought up to date in 1,229 *kwins*. In Sagaing the area of 9,672 acres in the flooded tracts, mentioned last year as needing resurvey, still remains to done. It was visited in the field-season and as the cultivation is chiefly *kaing* it is proposed to increase the number of island surveyors for a season, and resurvey it. In the Upper Chindwin the local staff surveyed 510 acres of extensions, and 3,639 acres remain to be done, for which an extra staff will have to be entertained. In Kyauksè a special staff will be required for the 30,547 acres which were mentioned last year as needing resurvey. In Yamèthin the *kwin* maps of the whole district are under examination as to the need for resurvey, and so far a proposition for the resurvey of 20,000 acres in the Lewe Township has been submitted.

Preservation of permanent survey marks.

12. In Kyaukpyu and Sandoway it is reported that where circle headmen collect revenue the village headmen under them show little interest in the survey marks in their charges. In Pegu the village headmen's reports, which this year were properly submitted, showed a large number of marks to be missing mostly in the flooded tracts, but the staff evinces more care in the matter, and now that the survey of the greater part of the district has been revised, the replacement of lost marks will not be difficult and an improvement is expected in the near future. In Prome many of the marks along the boundary of the unsurveyed hill tracts have been allowed to disappear which will impede the survey of extensions in their neighbourhood. In Ma-ubin yearly floods are responsible for the large number of marks regularly found missing. In Pyapôn headmen are lax in enforcing the preservation of marks by owners of holdings, but when marks are distant from the headman's village and owners are non-resident enforcement is difficult. In Bassein all broken marks and 19 out of 23 lost marks were replaced and the rules for their preservation by headmen are said to be generally observed. In Henzada many cultivators have been fined for not protecting marks in their holdings, and this measure produces a good effect on their neighbours. In Myaungmya the headmen as a whole take an interest in mark preservation, and it was not found necessary to punish any for neglect. In Toungoo two headmen were reported for neglect of duty in this respect, but on the whole matters are said to be improving. In Thatôn the preservation of marks seems to have been seriously neglected in the past, and the fact that the special survey party found 406 pipes intact out of 658 reported to be missing shows that the annual examination has been perfunctory. The headmen have hitherto not submitted annual reports. This very unsatisfactory state of affairs is receiving attention. In Amherst revision surveys have discovered several faulty replacements of marks. A set of 2-inch maps of theodolite stations is under preparation for the district.

In Magwe annual reports by headmen, which have hitherto not been made, are being enforced. In Katha it has been found necessary to punish headmen and cultivators for failure to protect marks, and in Sagaing two headmen have been fined for this reason. In Kyauksè only 1,667 marks out of the 2,969 to be visited this year were inspected; out of those inspected the proportion protected was high. In Meiktila, owing to pressure of survey work, no special search for marks was made, but the fact that while the Superintendent out of 61 visited found 54 protected and the rest missing, the Inspectors out of 89 visited, found 34 protected and 34 lost seems to indicate the necessity of attention to this matter. In Yamèthin the orders for a triennial search for all marks seem to have been lost sight of. Where stone is procurable the pipes are being protected with cairns. In Myingyan also the orders for a periodical search seem not to be known as two-thirds of the pipes were visited during the year. Four headmen were punished for neglect of duty in regard to marks.

Miscellaneous duties.

13. Apprentice surveyors were examined in Mandalay, Meiktila and Sagaing; altogether 13 passed out of 29 who entered. Cattle death-registers were examined in most districts and found to be correctly maintained.

Encroachments on public roads were dealt with in Tavoy and steps taken to remove them.

Extracts from supplementary survey registers and maps were supplied to the public in large numbers in Mandalay, the totals being 97 at headquarters and 556 at Revenue Surveyors' Offices.

Grazing grounds received much attention during the year, not only as regards allotting new ones, but also in regard to the examination of those already in existence. In Akyab, 31 new grounds with an area of 4,735 acres were allotted. Proceedings were taken against 29 encroachers, three being evicted without punishment, in 25 cases fines were inflicted and in one case a sentence of one month's imprisonment was imposed. In Pegu, two grounds were added with an area of 645 acres, and 91 encroachments, with an area of 530 acres, dealt with. In Tharrawaddy, several grounds are said to have become useless, owing to the pasture being choked with *kaing* grass, which,

moreover becomes the haunt of wild animals, and it is contemplated to throw open some temporarily to cultivation to render them once more fit for grazing. In Prome, ten encroachments aggregating 875 acres have been dealt with; in four cases fines have been inflicted, while the other six are still pending. In Pyapôn, 14 new grounds with a total area of 3,742 acres were reserved and the allotment of 21 more with an area of 17,623 acres is under consideration: 28 old grounds have been re-demarcated and 14 encroachments extending to 113 acres have been dealt with. In Bassein, 14 grounds with an area of 1,927 acres were allotted and demarcated. In examining old grounds an error in area of 41 acres was detected, and 240 trespasses have been dealt with, convictions being obtained in 177 cases. In Henzada, numerous encroachments have been detected. In Myaungmya, six grounds with an area of 2,172 acres were reserved and proposals for four more are under consideration, and 70 persons found to have encroached on 420 acres in 23 grounds were suitably dealt with. In Toungoo, a special Myoôk was appointed for pending cases and had demarcated 24 grounds by the end of May. Encroachments are still met with, but less often than formerly. In Thatôn, one or two grounds were allotted and numerous encroachments dealt with. In Amherst, surveyors visited 81 allotments and redemarcated 55, while the other 26 were found to be correct. The Mudôn grazing ground of 1,090 acres was curtailed by 44 acres to provide space for the expansion of the town, and the clearing, demarcation and allotment of cattle-paths in the Mudôn plain was proceeded with. In Mergui the allotment of 45 spaces, mostly cattle-paths, aggregating 560 acres, proposed by the Revision Settlement Officer, is under consideration. In Shwebo two grounds aggregating 1,521 acres were allotted. In Yamèthin one ground was demarcated and in Myingyan two were allotted with an area of 315 acres.

Landholders' rights were applied for by 25 persons in Pyapôn, of whom the cases of four were decided, and the remainder are pending.

Tax tickets were checked in all districts and very few discrepancies were detected. In Akyab, Mandalay and the Upper Chindwin, minor errors were discovered and rectified but in Shwebo a case of fraud was discovered and the delinquent, a headman, prosecuted and dismissed.

The topographical maps were as far as possible kept up to date. In Sandoway, a two-inch map is being compiled locally for the whole district, and in Pegu and Myaungmya half-inch maps are being similarly prepared. In Thayetmyo, a two-inch Survey of India map is kept up to date, elsewhere a similar map on the one-inch scale. In Bassein, Toungoo, Amherst, Minbu, Magwe, Lower Chindwin and Myingyan full sets have not yet been obtained, and in Yamèthin none at all have been supplied.

Village Headmen Scheme.

14. In Akyab, the village headmen scheme was introduced into five circles leaving only eight circle *thugyis*. In Sandoway, it was introduced into two circles, leaving only five circle *thugyis*, two of whom have applied for permission to retire on pension. In Henzada five circles became ready for division into villages and in Tavoy, two.

Conduct of the Supplementary Survey Staff.

15. Superintendents and Probationers have nearly all earned commendation from Deputy Commissioners, and on the whole the conduct of the subordinate staff has been good. In few districts, however, can it be said that there is no room for improvement. As might be expected such censure as is incurred falls on the surveyors and the *thugyisayes* rather than on the Inspectors, whose principal failing is their neglect or incapacity to exercise their authority over their subordinates.

In Rangoon town the staff, having far more work than it was possible for them to do, and lacking the guidance and control of a whole-time Superintendent, have actually done less than they might have done. In Pegu most of the members with long service have physically and mentally deteriorated and have become callous to indifferent and careless work, and the process of bringing them up to the mark or getting rid of them is consequently slow. In Thatôn the staff as a whole is reported to be lazy and perfunctory in the performance of its duties. The members are undisciplined and several were tried on criminal charges, one for attempt to murder, others seem to be heavily indebted and generally there is

reason to believe that many are corrupt. The Inspectors, while intelligent and capable, need driving and out-door work seems to be as distasteful to them as to the rank and file. This deplorable state of things has been amended since Mr. Carrapiett took over charge. In Mergui the revenue surveyors are generally inefficient and the difficulty of obtaining a better class of men, as Burmese is unknown in half of the district, will in the opinion of the Commissioner and Deputy Commissioner only be overcome when a local survey school is again opened. In Yamèthin the conduct of Inspectors and surveyors was unsatisfactory. The former Superintendent, Mr. Aubert, appears to have neglected inspections off the railway and is considered to be largely to blame for this state of things.

The dismissals and removals reported only amount to 22 as against 25 last year, while five surveyors died and one in Magwe was murdered. In Tharrawaddy a surveyor absconded while a charge of forgery was pending against him and in Kyauksè one man had to be invalided for insanity.

Inspectors Maung Thein Maung, Maung Ka and Maung Po Thaik, and record-keepers Maung Yin Maung and Maung Ba were promoted to be officiating Myoôks while several Inspectors acted as Demarcation Officers for town surveys.

Inspection of Field-work, Statement II.

16. The Director inspected supplementary survey field-work in 53 *kwins* in the Magwe, Meiktila, Minbu, Myaungmya and Myingyan Districts; the Deputy Director in 193 *kwins* in the Amherst, Bassein, Hanthawaddy, Henzada, Katha, Lower Chindwin, Mandalay, Mergui, Sagaing, Sandoway, Shwebo, Tavoy, Thayetmyo, Toungoo and Yamèthin Districts, and the Assistant Director in 116 *kwins* in the Akyab, Hanthawaddy, Kyaukpyu, Kyauksè, Ma-ubin, Pegu, Prome, Tharrawaddy and Thatôn Districts.

The number of *kwins* inspected by Deputy Commissioners has risen from 113 to 156, the highest figures being by Mr. A. E. Rigg, I.C.S., (Yamèthin, 20): Mr. E. N. Drury, I.C.S., (Myaungmya 11 and Magwe 6), and Mr. L. H. Saunders, I.C.S. (Shwebo, 10). Only one inspection was made in each of the following districts, Henzada, Kyaukpyu, Sandoway and Thayetmyo, while none were made in Mandalay, Meiktila, Mergui, Minbu and Pegu.

The average number of *kwins* inspected by Subdivisional Officers rose from a little under 10 to a little over that figure simultaneously with an increase in the number of inspecting officers from 64 to 66 and of *kwins* inspected from 635 to 682. The average of inspections by Township Officers fell from a little over 11 to a little under 10, and the total number from 1,788 to 1,534, but the number of inspecting officers rose from 158 to 160. The inspections by Subdivisional Officers deserving special mention are by:—Lieut. A. B. Roberts, I. A., Taungdwinggyi (47 *kwins*), Lieut. R. Hodgins, I. A., Meiktila (36 before his transfer in May 1907), Maung Po Te (1), Myinmu (35), Maung Gale, Kyaukpyu (34), Maung Thin, Madaya (28), Maung Myat Tha Kyaw, Pegu (28), Maung Hla Paw Zan, K.S.M., Minbya and Maung Hla Baw, Sagaing (27 each). Of the Township Officers the following deserve special mention:—Maung Paw Shan, Myaung (112 *kwins*), Maung Maung, Yindaw (64), Maung Kyaw Zaw I, T.D.M., Salè (41), Maung Tin II, A. T. M., Pagan (33), Maung Po Chit, Kyaukpadaung (29), Maung Kyaw Zan, Ye, Maung Pe Ba, B. A., Sandoway and Maung Gale, Patheingyi (26 each). No inspections were made by the Subdivisional Officers of Ngathainggyaung, Pa-an, Pyu and Thatôn, nor by the Township Officers of Bilin, Launglon, Madaya, Maungdaw, Mawlu, Moulmeingyun, Ngathainggyaung, Ngaputaw, Pa-an, Sagu, Tantabin, Taungtha, Tigyaung and Yamèthin. The total amount of checking by District Officers shows a decrease from last year and is far from sufficient.

The number of *kwins* checked by Superintendents, Land Records, shows a further rise from 2,542 to 2,616. Mr. George in Meiktila heads the list with 150 *kwins*, followed by Mr. Palmer in Sagaing (143), Mr. C. H. O'Hara in Katha (130), Mr. J. P. Connor in Lower Chindwin (118), Mr. W. S. O'Hara in Henzada (106), Mr. C. F. Cooper in Ma-ubin (102), and Mr. W. J. Baker in Magwe (101).

The Superintendents of Hanthawaddy (48), Pegu (47) and Amherst (31) have been much occupied in superintending new and revision surveys, while those of Bassein (41) and Tavoy (31) have suffered from ill-health.

The average number of *kwins* inspected by each Superintendent has risen from 85 to 87 per district, while Town, Fishery and Special Surveys have been carried on as well; this result is good. The number of *kwins* checked by Inspectors shows a slight decrease from 16,874 to 16,860, but the average shows a slight improvement as the number of Inspectors has decreased by one. The averages are more even this year than last year, Minbu coming first again with 163 *kwins* per man and Meiktila again second with 157, no other district showing an average of 150.

The total number of holdings checked by District Officers and the Land Records staff was 606,026 as against 606,961 last year, the percentage of errors, *viz.*, 16, being the same. According to the abstract statement of inspections furnished by the inspecting staff of the Department the errors discovered fell under the several minor heads as follows:—Survey, half an acre and over 3,282, under half an acre 7,602; fallow marking, 43,879; classification and rates 1,346 and statistical errors 96,742; total 152,851. The resulting *net* increase in revenue due to all inspections amounted to Rs. 10,331 against Rs. 12,983 last year.

Training of Civil Officers in Survey and Land Records work.

17. During the year 14 Assistant Commissioners, 6 Extra Assistant Commissioners and 7 Myoôks were put through a complete course of Surveying and Land Records work in Land Records Offices, and all passed the required tests. The training of one Myoôk has been deferred, while two Assistant Commissioners are still undergoing instruction. In Meiktila four officers were trained, in Sagaing and Bassein three officers each, in six districts two officers each and in eight districts one officer each. In respect to the training given at Sagaing the Deputy Commissioner remarks: "The three officers were under training at the same time during the best part of the field-season, and I cannot but think that this placed a rather undue strain on the Superintendent." Now that I am consulted before postings are made it will be possible in future to limit the number to be trained at one centre to two officers so that the ordinary Land Records work may not be interfered with. The results of the examinations also now pass through my office and are notified by me, and a register of postings and passes is maintained in my office.

Survey Schools. Statement III.

18. The number of Government Survey schools continues at 18, all of which except five are located in Government buildings. A school-house is now being built at Insein. In Bassein, the combined Survey School and Land Records Office on completion was taken possession of by the Judicial Department, so that another building will be required in its place. The total number of pupils on the rolls of the schools on the 31st March was 393, of whom 31 per cent. were exempt from the payment of the school fee. In Prome there were no paying pupils and in Pakôkku only one, while there was a large proportion of free pupils in Meiktila, Mônywa and Yamèthin. Under the Survey Class Scheme only the blood relations of *thugyis* or the sons of poor agriculturists may be thus exempted. The average number of pupils on the rolls in each month was 389. There was a marked falling off in the attendance at Minbu, Sagaing, Toungoo, and Ma-ubin; due in the first two cases to the presence of plague in the towns. In Toungoo the reason given is that education in the locality is backward, but as a matter of fact there are several educational institutions in the district. The failure of village headmen to send their sons to the Survey School there is, as the Commissioner observes, remarkable. The best attended schools were those of Insein, Meiktila, Pakôkku, Bassein and Akyab. The improvement in the standard of qualification of candidates seeking admission into the schools continues. The attendance at the classes was generally regular, but it was indifferent at Prome, Toungoo and Katha; in Katha, however, the absences were chiefly due to attacks of fever. Applications have been received for the appointment of Assistant Teachers for the Schools at Minbu and Moulmein, owing to the large number of pupils seeking admission at those schools. In the former case the appointment has been recommended for sanction, in the latter case an alternative proposal to reopen a school at Mergui and Tavoy for the use of the Tavoy and Mergui Districts is being considered. Sixty-eight scholarships of the first grade and 140 of the second grade

at Rs. 10 and Rs. 5 each per mensem, respectively, were granted during the year. The allotments rest with Commissioners. During the present term the Kyauksè District has relinquished two first grade and six second grade scholarships in favour of Meiktila which already possesses a number of them. Ordinarily, there should be no lack of applicants for scholarships where proper steps are taken to procure candidates for the Schools. The amount paid on account of scholarships in the year was Rs. 14,813. A sum of Rs. 480 was allotted as prizes to the various Schools, on a consideration of the attendance and on the results of a test examination. The proportion of the sons of *thugyis* and agriculturists to traders and others was as 3 to $2\frac{1}{2}$; there was a decrease in the former as compared with the latter, which is a matter for regret. The explanation given for the Pegu School is that cadets of *thugyis'* families prefer to train for more lucrative and attractive departments. The demand for trained surveyors continues; they are required to fill up vacancies in the ordinary Land Records line, and also for Town, Revision, Extension and other surveys. Passed students to a small extent find suitable work in other departments and businesses. Attention continues to be given to training apprentices in practical surveying and land records work, after they have secured syndicate certificates of qualification under the rules, and advantage is taken of the presence of local cadastral parties to attach apprentices to them for instruction in the capacity of paid or unpaid followers. The total expenditure on the maintenance of the schools amounted to Rs. 40,462, while the total income from fees and other sources was Rs. 5,561; the net cost therefore was Rs. 34,901. This works out to Rs. 89 per pupil, or Rs. 8 more than last year. This increase is due to the diminished attendance at several schools. At the Syndicate examination of April 1907, the number of candidates from Government Survey Schools who succeeded in passing in Surveying, Arithmetic and Revenue Law were, respectively, 277, 131 and 190 or 79, 42 and 59 per cent. of the total number presented in each of these subjects. The results of the examination in surveying were particularly good; this is due in part to the fact that those students only were permitted to appear for the examination who had passed a preliminary test and had a reasonable chance of passing. The passes in arithmetic were poor and in revenue law fair. The failures at the Pegu School in arithmetic are described as remarkable in as much as most of the 7th standard pupils failed, though the paper set is said to have been only of average difficulty. The schools that did best in surveying are Insein, which takes the lead in this respect this year, Bassein, Minbu, Pakôkku and Moulmein. The 'Clancey' medal for proficiency in surveying was won by a student of the Ma-ubin School to which it also fell in the year before last. In arithmetic the Moulmein, Bassein, Insein and Akyab Schools did comparatively well, while the ones that faired worst were Mandalay, Katha and Sagaing. In revenue law, Kyaukpyu passed none and Prome and Akyab but few; the most successful Schools in this subject were Meiktila, Minbu, Bassein and Moulmein.

All the schools with the exception of Mônywa, Meiktila and Yamèthin were inspected by me or by my two Assistants. The map work in Bassein, Kyaukpyu, Moulmein and Ma-ubin was exceptionally good, and in Pegu poor; in Akyab the quality of the mapping has improved. Field work continues to receive special attention and an improvement all round was noticeable. The complaint comes from some centres that paddy fields for a training in actual survey work are situated at an inconvenient distance from the schools; in such cases it should be possible to apportion two or three entire days in the week for out-door work alone, while the rest of the week could be devoted to the in-door studies. The Schools at Toungoo and Prome were insufficiently visited by the Superintendent of Land Records. The success of a school depends largely on the interest taken in its welfare by the Superintendent in charge. The teachers as a class have worked with commendable zeal; those who might be specially noticed for good all-round work, are the teachers at Insein, Moulmein, Minbu, Pakôkku, Ma-ubin, Bassein and Sagaing. The work of the teacher at Mandalay was unsatisfactory, and he has been replaced by another man with good qualifications. The teachers at Prome, Toungoo, Yamèthin and Pegu are capable of doing better. The teacher at Katha shows signs of improvement. I am satisfied that the schools are on the whole well-taught, and

looked after by the responsible local officers, and they adequately serve the requirements of the Department. The Deputy Commissioner of Toungoo visited the school at that centre.

Supplementary Survey in towns. Statement V.

19. In only five districts is regular supplementary survey work in towns in progress. In most districts the town lands rolls have not yet been completed and until this is done the up-keep of the rolls of persons in possession of town lands cannot of course be maintained. The work of the preparation of the rolls proceeds slowly, but it, like the survey, is perhaps best not forced. Details of the supplementary survey work in hand are given in Statement No. V. The total area of the five towns at present under supplementary survey is 8·99 square miles, containing 2,102 acres under occupation. The number of surveyors employed is 8 and the cost of the operations in the year amounted to Rs. 5,436. This, however, includes the cost of the surveyors of Maymyo town and Mandalay Cantonment in which the surveyors also look after the up-keep of the 16-inch maps and connected registers. With effect from the 1st April 1907, the Local Government has ruled that the cost of supplementary survey in towns is to be borne, in the case of Municipalities and notified areas, half by Provincial and half by the Municipal or Town Fund, and that in towns which are neither Municipalities nor notified areas the cost of supplementary survey will be equally divided between Provincial and District Funds. The scale of the surveys is 64 inches to the mile, though portions of some towns are also on other scales, such as 40 feet and 80 feet.

The maps and registers have generally been correctly brought up, though in Maymyo town of the Mandalay District the work was capable of improvement and in Katha town of the Katha District the Commissioner found the work defective. In Pegu District the preparation of the town lands rolls, including that of Pegu town, is still in hand though approaching completion. In Myaungmya the town lands rolls have not yet been completed by the Township Officers. In Katha the maps and registers have been brought up for Katha and Wuntho towns, but they are not yet complete for Kawlin owing to a recent extension of that town. In Shwebo there are 9 out of the 16 towns surveyed by plane-table only which are not yet under supplementary survey. In Meiktila an extra surveyor will be required for the supplementary survey work of the 4 towns that have been surveyed by plane-table only. The demarcation of house-sites in 3 of the towns, *viz.*, Meiktila, Thazi and Mahlaing, was done in the year under the supervision of the Superintendent by the town surveyor who has not yet been able to take up the demarcation in Thedaw.

Miscellaneous.

20. The Agricultural section of the Department having been transferred in the year to the new Department of Agriculture, the whole of Section II, on Agriculture, which appeared in previous reports and which embraced the following subjects, *viz.*, (i) Collection of Economic Products, (ii) Agricultural Shows, (iii) Experimental gardens, and (iv) Experimental cultivation, has been excluded from the present report.

The annual Trans-frontier Trade and Season and Crop Reports, and the Note on Rainfall Registration, have issued separately. The rice and cotton forecasts were published as usual; the former relates to the 15 principal rice producing districts in Lower Burma, and the latter to all districts in which cotton is grown, whatever the area. Revised instructions regarding the preparation of the rice and cotton forecasts have recently been issued. The instructions for the preparation of the Annual Season and Crop Report, and those relating to Rainfall Registration, have also been revised.

The Land Records Manual referred to in last year's report is ready in outline and has now been issued for criticism before final publication. It is intended that the volume shall be self-contained and render references to the numerous orders relating to Land Records work which are contained in various Acts, Rules, Regulations, Directions and Circulars unnecessary. An abridged edition will subsequently be issued in Burmese for the use of the subordinate staff of the Department.

The control of Town and Fishery surveys has now been vested in me, with effect from the 1st March 1907, and instructions regarding them have been

issued and will shortly be embodied fully in the Survey Manual for Land Records offices. The Directions for the survey and demarcation in towns and the up-keep of town Lands Rolls were promulgated by the Financial Commissioner some time back, and are to be introduced into the Town and Village Lands Manual. The draft Directions for the Supplementary Survey in Towns were drawn up by the Secretary to the Financial Commissioner, and the criticisms on them are now under the consideration of the Financial Commissioner.

Under the orders relating to the nomination annually of subordinate officers of the Land Records Department for appointment without examination to Myoôkships, Maung Thein and Maung Ka, Inspectors of Land Records in Pegu and Mandalay, respectively, were promoted to Myoôks.

Consolidated instructions relating to the training of apprentice surveyors have been issued, in order to ensure a more thorough and practical training in Surveying and Land Records work before a candidate is entitled to a proficiency certificate in these subjects.

The services of Revenue Surveyors and *thugyisayes* now count for pension, with effect from the 1st October 1906. A long-standing grievance has thus been satisfactorily settled.

A fresh scheme of reorganization of the superior branch of the Land Records Department has been formulated and is now before the Government. It provides for an increase in the number of officers and also secures substantial improvement in their pay and prospects. If it is sanctioned it should conduce to general efficiency and to render the Department attractive as a career to the class of officer with which we wish it to be manned. The travelling allowance of officers has also been improved, and proposals have been submitted for their further betterment. The rules regarding the recruitment and efficient training of Probationers and junior Superintendents referred to in last year's report are still before Government. When these are brought into force, fully qualified and well-trained surveyors will be forthcoming for the work of the Department in which surveying forms such an important element.

Under the orders of the Government of India after the close of the survey year 1907-08, future original cadastral surveys are to be conducted locally independently of the Survey of India Department. In this connection it has been decided to strengthen the map-printing section of the Government Press with a view to meeting the complete map requirements of the Province, inclusive of the reproduction of sheets relating to extension, revision, town and fishery surveys, and other miscellaneous map-work. Proposals have been drawn up in the matter in consultation with the Superintendent of Government Printing, and now await orders. It is intended to depute a junior Land Records Officer to the Press, when one can be spared, to assist in the supervision of the map-work, in order that a proper type of mapping suited to the special wants of the Department may be obtained.

The question of the proper up-keep of the large scale maps of Rangoon Town, and of the sphere of the work of the Registrar is under enquiry. The establishment is being considerably strengthened and it is intended that the work shall be fairly distributed between the various branches of the Deputy Commissioner's Office. If the proposals are accepted, the entire machinery should work more smoothly than it has done in the past, and the valuable maps of the town should be correctly maintained, which has not been the case hitherto.

At the departmental examination of June, four Probationers passed in Surveying, three in Revenue Law by the Higher Standard and four by the Higher Standard in Burmese.

Services of Officers.

21. The Superintendents and Probationers of the Department have been generally well reported on. Most of them had unusually heavy duties to perform in connection with various special surveys and other work, and have acquitted themselves most creditably. The officers who may be singled out for special mention for conspicuously good work are Messrs. Haddock, Palmer and Baker, Maung Kyi O, Maung Pe Maung, Messrs. Carrapiett and Ripley, Maung San Shwe, and Messrs. Körper, McKertich and D'Souza.

Mr. W. E. Lowry, I.C.S., Deputy Director, worked enthusiastically during the year and was indefatigable in his inspections both in field and office. He introduced numerous improvements in the details of supplementary survey work.

Mr. J. C. Clancey, F.R.A.S., Assistant Director, has given me most valuable assistance throughout the year. The number of special surveys of all kinds in progress during the year was unusually large and in regard to these particularly Mr. Clancey's advice has been most useful and his local inspections very beneficial.

T. C. WILSON,

RANGOON, 28*th August* 1907.

Settlement Commissioner and Director of Land Records, Burma.

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STATEMENT No. I.—*Area under and cost of Supple*

District.	Total area.				Total assessment (including cess in Lower Burma) on the area in column 5.
	Total in	Under occupation.	Under cultivation.	Under assessment.	
1	2	3	4	5	6
	Sq. Miles.	Acres.	Acres.	Acres.	Rs.
Akyab	1,936	631,188	534,205	623,955	17,28,047
Kyaukpyu	762	149,023	143,772	146,883	2,62,725
Sandoway	268	53,996	51,411	53,728	1,00,016
Hanthawaddy	2,621	1,220,095	1,169,299	1,219,571	39,04,765
Pegu	2,364	862,617	815,352	861,418	22,34,081
Tharrawaddy	1,159	466,212	437,706	465,982	11,80,881
Prome	1,724	351,541	314,489	350,800	5,73,630
Ma-ubin	1,648	451,603	405,409	450,972	12,37,121
Pyapôn	1,165	593,988	576,125	588,833	16,11,793
Bassein	2,223	652,910	578,587	648,717	15,74,008
Henzada	1,809	540,496	495,677	537,910	14,13,798
Myaungmya	1,827	606,553	535,657	602,894	18,03,618
Toungoo	1,497	373,439	339,250	347,735	7,96,687
Thatôn	2,224	654,260	619,161	643,646	12,44,149
Amherst	1,298	384,009	354,054	368,958	7,63,080
Tavoy	469	118,286	110,972	115,950	3,11,146
Mergui	590	87,204	80,504	86,143	1,70,555
Thayetmyo	577	95,292	76,261	95,051	1,29,227
Minbu	1,418	418,889	226,140	197,945	3,77,362
Magwe	2,915	910,304	361,002	319,590	3,52,317
Mandalay	700	240,218	162,673	155,097	6,90,890
Katha	1,080	179,823	155,239	153,290	1,80,976
Shwebo	3,680	1,046,492	740,864	99,564	2,01,836
Sagaing	1,826	718,949	470,358	420,743	4,41,099
Lower Chindwin	2,595	733,005	460,093	411,295	3,01,075
Upper Chindwin	103	36,442	28,207	27,503	33,815
Kyauksè	567	249,304	176,814	165,303	8,24,974
Meiktila	1,620	618,621	348,612	258,546	3,38,697
Yamèthin	1,776	436,405	286,820	189,851	3,50,403
Myingyan	3,029	1,170,201	612,676	379,954	3,48,482
Total for 1906-7 ...	47,470	15,051,365	11,667,389	10,987,827	2,54,81,253
Total for 1905-6 ...	43,652	* 13,776,947	* 10,843,269	* 10,931,427	* 2,49,59,173

* Revised

mentary Survey for the year 1906-7 (Paragraph 8).

Number of Inspectors.	Number of Surveyors.	Total Cost.							Remarks.
		Per square mile (column 2).			Per acre of the area in column 3.	Per cent. of the assessment in column 6.	Of superintendence and inspection.	Of the Survey Staff.	
		Of superintendence and inspection.	Of Survey Staff.	Of combined total.					
7	8	9	10	11	12	13	14	15	16
		Rs.	Rs.	Rs.	Ans.	Rs.	Rs.	Rs.	
5	79	7·94	19·77	27·71	1·360	3·10	15,371	38,274	
4	33	16·30	13·70	30·00	2·455	8·70	12,424	10,441	
3	11	35·22	17·72	52·94	4·204	14·19	9,438	4,750	
9	107	9·75	23·05	32·80	1·127	2·20	25,544	60,414	
9	75	10·20	16·86	27·06	1·188	2·86	24,111	39,864	
5	49	10·35	22·46	32·81	1·305	3·22	11,997	26,036	
5	54	8·66	14·59	23·25	1·824	6·99	14,929	25,157	
5	51	7·47	16·39	23·86	1·393	3·18	12,314	27,004	
6	64	14·77	28·45	43·22	1·356	3·12	17,202	33,147	
8	70	7·64	16·18	23·82	1·298	3·36	16,992	35,965	
6	62	7·20	18·14	25·34	1·357	3·24	13,027	32,813	
6	57	8·63	15·51	24·14	1·163	2·45	15,765	28,335	
4	41	8·62	12·93	21·55	1·382	4·05	12,901	19,353	
6	72	7·57	16·49	24·06	1·309	4·30	16,829	36,683	
5	44	10·00	15·17	25·17	1·361	4·28	12,980	19,686	
3	22	17·12	21·54	38·66	2·453	5·83	8,028	10,104	
3	20	15·28	14·28	29·56	3·200	10·23	9,017	8,426	
2	20	13·25	16·01	29·26	2·835	13·06	7,647	9,235	
5	45	8·91	12·67	21·58	1·169	8·11	12,637	17,961	
8	75	6·50	9·69	16·19	0·830	13·40	18,952	28,253	
5	50	24·02	31·58	55·60	2·593	5·63	16,816	22,107	
5	38	11·45	15·04	26·49	2·546	15·81	12,369	16,248	
10	100	5·89	10·14	16·03	·902	29·23	21,681	37,324	
8	69	11·60	16·57	28·17	1·145	11·66	21,183	30,253	
6	56	5·56	8·91	14·47	·819	12·47	14,426	23,114	
1	8	56·30	32·54	88·84	4·018	27·06	5,799	3,352	
6	45	24·07	29·60	53·67	1·953	3·69	13,649	16,785	
5	54	9·70	12·96	22·66	·950	10·84	15,718	21,003	
5	52	8·65	10·92	19·57	1·274	9·92	15,369	19,387	
8	74	6·28	8·92	15·20	0·630	13·22	19,031	27,032	
166	1,597	9·36	15·35	24·71	1·247	4·60	4,44,146	7,28,506	
153	1,475	9·15	15·40	24·55	* 1·245	* 4·29	3,99,419	6,72,448	

figures.

STATEMENT NO. II.—*Supplementary Survey*

District.	Total number of *kwins* in tract.	NUMBER OF *KWINS* IN WHICH BY LAND RECORDS STAFF.				
		Superintendent.	*Inspectors.*			Total.
			Number of Inspectors.	Number of *kwins* checked.	Average.	
1	2	3	4	5	6	7
Akyab	1,116	46	5	530	106	559
Kyaukpyu	699	69	4	291	73	360
Sandoway	291	74	3	184	61	258
Hanthawaddy	2,807	48	9	1,085	121	1,133
Pegu	1,207	47	9	627	70	652
Tharrawaddy	544	85	5	499	100	583
Prome	1,024	97	5	693	139	760
Ma-ubin	569	102	5	345	69	447
Pyapôn	627	69	6	431	72	450
Bassein	1,275	41	8	509	64	520
Henzada	849	106	6	606	101	632
Myaungmya	1,057	77	6	600	100	632
Toungoo	769	94	4	379	95	431
Thatôn	1,362	114	6	469	78	537
Amherst	864	31	5	379	76	410
Tavoy	517	31	3	306	102	312
Mergui	642	95	3	195	65	282
Thayetmyo	377	85	2	246	123	241
Minbu	846	67	5	815	163	702
Magwe	2,264	101	8	1,061	133	1,061
Mandalay	728	97	5	566	113	470
Katha	1,937	130	5	535	107	665
Shwebo	1,364	127	7	781	112	786
Sagaing	1,169	143	8	1,056	132	1,073
Lower Chindwin	1,622	128	6	537	90	630
Upper Chindwin	188	92	1	88	88	132
Kyauksè	639	79	6	552	92	631
Meiktila	1,994	150	5	784	157	934
Yamèthin	1,886	98	5	619	124	623
Myingyan	2,832	93	8	1,092	137	1,185
Total for 1906-7 ...	34,065	2,616	163	16,860	103	18,091
Total for 1905-6 ...	33,347	2,542	164	16,874	103	17,530

* Figures not

Inspections for the year 1906-7 (Paragraph 16).

THE FIELD WORK WAS TESTED.

Difference in revenue due to corrections.		By District Officers.								Remarks.
		Commissioner.	*Subdivisional Officers.*			*Township Officers.*			Total.	
Total increase.	Total decrease.	Deputy	Number of Subdivisional Officers.	Number of *kwins* checked.	Average.	Number of Township Officers.	Number of *kwins* checked.	Average.		
8	9	10	11	12	13	14	15	16	17	18
Rs.	Rs.									
608	67	7	4	65	16	9	58	6	130	
692	137	1	1	34	34	5	100	20	134	
27	4	1	...	...	...	3	50	17	51	
350	50	7	3	21	7	7	137	20	165	
421	84	...	3	45	15	6	38	6	83	
250	94	7	2	30	15	5	70	14	107	
97	24	5	3	22	7	7	38	5	65	
1,217	...	5	2	16	8	4	13	3	33	
1,135	330	6	2	12	6	4	20	5	38	
1,141	282	9	2	6	3	6	21	4	36	
745	301	1	3	14	5	6	37	6	52	
1,034	231	11	2	14	7	4	15	4	40	
507	73	3	3	15	5	7	58	8	70	
280	120	2	3	9	3	6	24	4	35	
452	2	2	3	20	7	7	69	10	91	
41	...	7	...	...	...	4	41	10	41	
290	41	...	2	12	6	4	30	8	42	
221	260	1	2	9	5	4	16	4	26	
1,038	650	...	2	7	4	5	28	6	35	
490	240	10	2	51	26	6	34	6	95	
4,005	2,394	...	2	47	24	4	50	13	97	
69	194	8	3	15	5	7	28	4	51	
*	*	10	3	19	6	8	50	6	77	
517	319	6	2	62	31	6	173	29	241	
281	338	5	2	7	4	5	29	6	40	
63	61	8	1	17	17	1	18	18	40	
789	300	7	2	6	3	3	19	6	32	
274	366	...	3	53	18	6	38	6	91	
1,020	1,104	20	2	32	16	5	111	22	163	
596	253	7	2	22	11	6	121	20	150	
18,650	8,319	156	66	682	10	160	1,534	10	2,351	
20,073	7,090	113	64	635	10	158	1,788	11	2,508	

available.

STATEMENT NO. III.—*Statistics relating to Government*

Station in which school is established.	Average number of pupils on the rolls in each month.	Number of days the school was in session.	Average number of days each pupil received tuition.	Number of pupils on the rolls on the 31st March.			Total income.
				Pupils paying fees.	Free pupils.	Total.	
1	2	3	4	5	6	7	8
							Rs.
Akyab	18	246	243	25	..	25	258
Kyaukpyu	22	267	212	22	1	23	249
Insein	25	272	245	32	...	32	606
Pegu	19	271	229	19	...	19	485
Prome	15	276	234	...	17	17	28
Ma-ubin	27	273	222	19	2	21	631
Bassein	22	244	224	23	2	25	606
Henzada	20	263	210	19	3	22	418
Toungoo	14	262	205	14	...	14	359
Moulmein	27	249	235	24	...	24	708
Pakôkku	24	267	246	1	26	27	31
Minbu	32	275	212	20	4	24	260
Mandalay	14	271	250	10	5	15	125
Katha	19	271	259	15	6	21	180
Sagaing	27	258	233	8	8	16	236
Mônywa	21	257	247	8	14	22	128
Meiktila	25	274	241	5	23	28	164
Yamèthin	18	261	231	6	12	18	89
Total for 1906-7 ...	389	264	232	270	123	393	5,561
Total for 1905-6 ...	391	266	243	261	141	402	5,569

Survey Schools for the year 1906-7 (Paragraph 18).

Expenditure.					Number of pupils who passed the last examination in			Remarks.
On establishment.	On scholarships.	On prizes.	On contingencies.	Total.	Surveying.	Arithmetic.	Revenue Law.	
9	10	11	12	13	14	15	16	17
Rs.	Rs.	Rs.	Rs.	Rs.				
1,104	463	28	395	1,990	15	11	6	
1,151	712	26	275	2,164	9	6	...	
1,062	553	36	437	2,088	28	11	10	
1,232	900	20	111	2,263	13	7	7	
1,104	808	18	207	2,137	13	7	5	
1,104	950	28	345	2,427	16	6	8	
1,128	954	28	415	2,525	24	14	18	
924	536	28	153	1,641	16	10	12	
1,140	441	18	422	2,021	10	5	9	
1,104	1,790	28	732	3,654	18	19	17	
1,284	884	34	189	2,391	19	5	7	
1,104	1,061	34	222	2,421	23	9	20	
1,082	622	18	222	1,944	9	1	6	
1,104	833	24	225	2,186	12	2	13	
1,271	660	34	275	2,240	15	2	10	
1,284	604	26	131	2,045	12	4	13	
961	1,346	30	105	2,442	15	8	20	
1,056	696	22	109	1,883	10	4	9	
20,199	14,813	480	4,970	40,462	277	131	190	
19,108	14,849	480	3,881	38,318	251	236	160	

STATEMENT No. IV.—*Area under and cost of Demarcation and Survey of Town Lands in* 1906-7 (Paragraph 5).

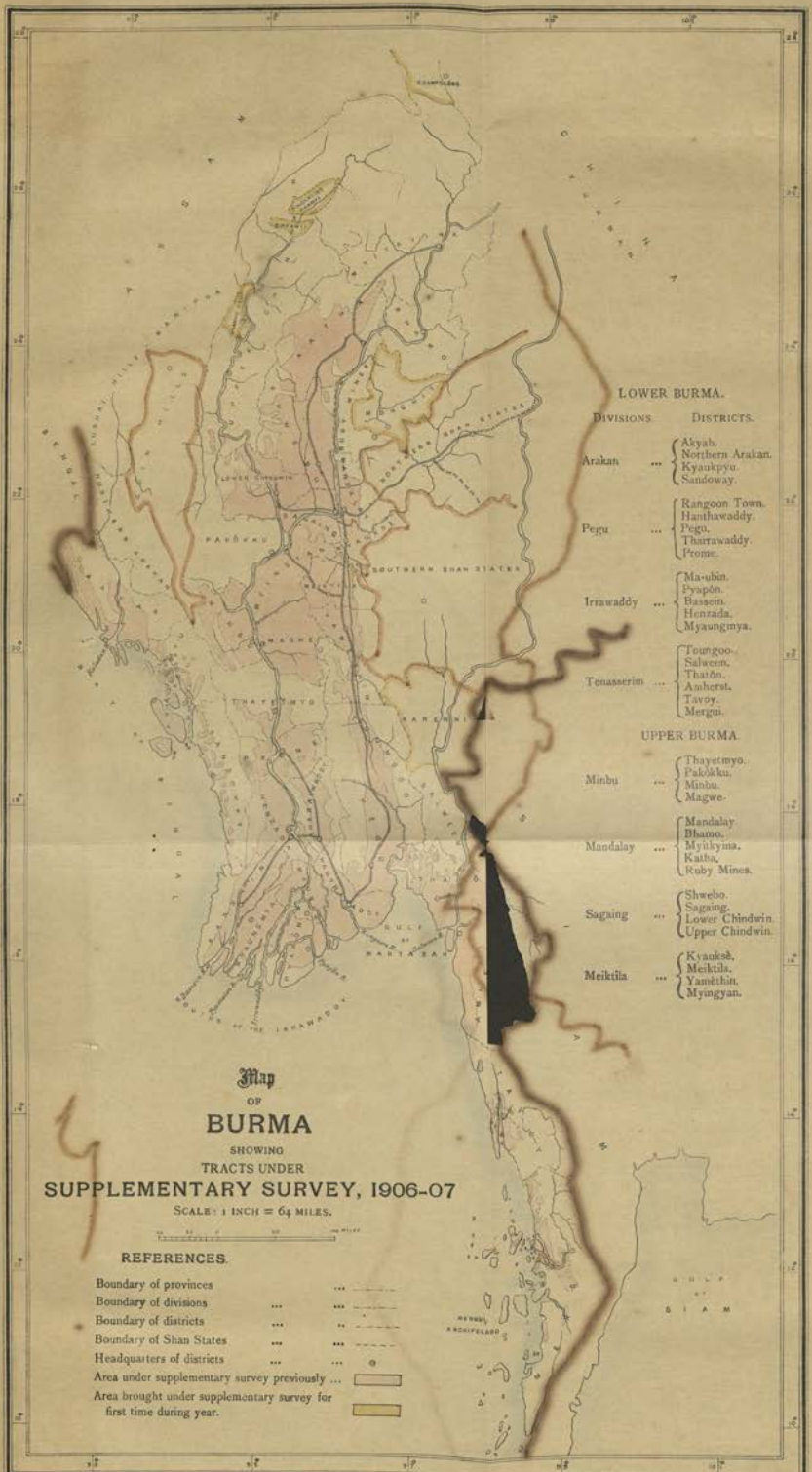
District.	DEMARCATION.					SURVEY.												Cost (field and recess).	Remarks.
						Traverse (field).				Cadastral (field).						Recess.			
	Demarcation Officer.	Period.	Towns.	Area.	Cost.	Sub-Surveyors.	Period.	Towns.	Area.	Inspectors.	Field Surveyors.	Draughtsmen and Computors.	Period.	Towns.	Area.	Inspectors, Draughtsmen and Computors.	Period.		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
		Ms.		Sq. mls.	Rs.		Ms.		Sq. mls.				Ms.		Sq. mls.			Rs.	
Akyab ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Maps revised in 1905-06. Tenure enquiry postponed to 1907-8.
Rangoon Town	1	8	1	0·15	1,036	...	...	...	...	...	...	...	...	...	...	...	...	...	Survey on 100 feet to be undertaken later of Bahan quarter of town.
Hanthawaddy...	1	2	2	0·52	...	1	2	1	0·52	...	3	4	2	1	0·52	4	2	...	Sanction received 19th April 1907. Recess work in hand.
Tharrawaddy ...	3	8	12	16·02	3,246	2	3	12	15·00	1	3	1	5	12	16.02	6	6	5,594	Recess work in progress.
Prome ...	1	6	7	15·05	2,756	2	3	7	15·05	1	6	1	5	6	6·05	7	6	4,433	Recess work in progress. Town Lands rolls not yet started. Special officer proposed for tenure enquiry.
Ma-ubin ...	1	5	8	3·38	1,610	1	3	8	3·38	1	3	1	6	8	3·38	5	4	3,710	Recess work in progress. Tenure enquiry proceeding. Town Land Rolls to be begun shortly.
Pyapôn ...	...	...	...	...	...	...	...	...	...	...	1	...	2	1	0·38	...	...	128	Demarcation and traverse done last year. Town Lands rolls in hand.
Henzada ...	1	4	1	1·87	1,320	1	3	1	1·87	...	1	...	3	1	1·87	2	2	711	Recess work in hand.
Myaungmya ...	1	3	2	1·85	698	1	4	2	1·85	1	4	...	4	2	1·85	5	2	2,956	Do.
Thatôn ...	1	6	1	6·00	995	2	6	1	6·00	1	3	6	5	1	6·00	6	4	9,489	Recess work in hand. Town Lands roll completed. Traces being prepared for Settlement party.
Amherst ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Survey of Amherst town deferred to next season owing to late receipt of sanction.
Tavoy ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Proposed to re-demarcate house-sites in Tavoy town.
Mergui ...	1	2	1	0·23	233	...	...	...	...	...	1	...	2	1	0·07	...	...	78	Revision Survey of part of town.
Pakôkku ...	1	6	1	3·61	2,632	...	...	...	...	...	1	1	6	1	3·61	...	...	888	Survey in progress.
Minbu ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Tenure enquiry of four towns previously surveyed, not yet completed.
Magwe ...	...	...	...	...	...	1	1	1	1·00	...	1	...	6	1	1·00	...	...	880	Town Land rolls not yet begun.
Mandalay ...	2	...	...	2·34	929	...	...	...	...	...	2	2	...	1	2·34	...	...	...	Surveyors attached to Demarcation Officers for verification of boundaries. Work still in progress.
Katha ...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2·00	...	...	1,087	Surveyed by the Town Lands Surveyor.
Sagaing ...	1	2	2	0·91	197	...	...	...	...	...	1	...	3	2	0·91	...	...	156	Survey of Tada-u town done by Survey school pupils. Recess work in hand. Traces under preparation in connection with writing up of Town Lands rolls.
Lower Chindwin	1	2	2	1·40	234	...	...	...	...	...	...	...	...	...	...	...	...	...	Survey not yet commenced. Demarcation done.
Upper Chindwin	...	9	4	0·98	...	...	...	...	...	...	1	...	6	4	0·98	1	2	648	Demarcation done by respective Subdivisional Officers. Survey of three towns completed and of Homalin approaching completion. Town Land rolls prepared for three towns.
Yamêthin ...	...	...	...	...	...	1	2	1	...	...	2	2	2	1	...	...	...	800	Survey stopped for want of traverse data. Town lands rolls of three towns surveyed last year completed.
Myingyan ...	1	4	2	3·99	570	1	7	2	3·99	1	4	2	7	2	3·99	...	4	3,423	Demarcation of Nyaung-u town done by Township Officer. Survey enquiry just started. Town lands rolls not yet prepared.
Total ...	17	2-9	41	58·25	16,851	13	1-7	31	48·66	6	47	20	2-7	42	50·92	36	2-6	34,481	

STATEMENT NO. V.—*Area under and cost of Supplementary Survey in Towns in* 1906-7 (Paragraph 19).

District.	Towns.	Scale.	Total area.	Occupied area.	Per survey mark.	Staff.			Cost.	Inspections.		Remarks.
						Inspectors.	Surveyors.	Draughtsmen and Computors.		By Superintendent.	By Deputy Superintendent.	
1	2	3	4	5	6	7	8	9	10	11	12	13
			Sq. mls.	Acres.					Rs.			
Kyaukpyu ...	1	64"	1·22	444	52	...	1*	...	136	1	...	*For 8 months in year.
Pegu ...	17	64"	9·11	4,993	...	...	4	...	...	...	...	Preparation of town lands rolls, including Pegu town still in hand; supplementary survey thus not yet started.
Myaungmya ...	6	...	...	...	...	...	...	...	...	...	...	Town lands rolls not yet completed by Township Officers, hence supplementary survey not yet begun.
Mandalay ...	2	64" / 40"	0·45	862	141	...	4*	...	2,585*	2	1	*Inclusive of work relating to 16" survey appertaining to 10·44 square miles with 1,967 acres under occupation.
Katha ...	3	64"	1·47	503	130	...	1	...	1,037	1	...	Map and registers of 1 town not yet completed.
Shwebo ...	7	64"	1·07	236	110	...	1	...	720	7	7	
	9	64"	3·24	757	...	...	...	...	...	...	...	The supplementary survey of these towns has not been taken up.
Melktila ...	4	40" / 80"	4·78	557	...	...	1	...	956	...	...	Demarcation of three towns completed and of one town remains.
Total ...	17	...	8·99	2,102	433	...	8	...	5,436	11	8	

*The detail survey of Prome town remains to be done.

G. B. C. P. O.—No. 90, S. C. & D. L. R., 9-10-1907—290


LOWER BURMA.
DIVISIONS. DISTRICTS.
Arakan ... Akyab. Northern Arakan. Kyaukpyu. Sandoway.
Pegu ... Rangoon Town. Hanthawaddy. Pegu. Tharrawaddy. Prome.
Irrawaddy ... Ma-ubin. Pyapôn. Bassein. Henzada. Myaungmya.
Tenasserim ... Toungoo. Salween. Thatôn. Amherst. Tavoy. Mergui.
UPPER BURMA.
Minbu ... Thayetmyo. Pakôkku. Minbu. Magwe.
Mandalay ... Mandalay. Bhamo. Myitkyina. Katha. Ruby Mines.
Sagaing ... Shwebo. Sagaing. Lower Chindwin. Upper Chindwin.
Meiktila ... Kyaukse. Meiktila. Yamethin. Myingyan.
SOUTHERN SHAN STATES
MERGUI ARCHIPELAGO
GULF OF SIAM

Map
OF
BURMA
SHOWING
TRACTS UNDER
SUPPLEMENTARY SURVEY, 1906-07
SCALE: 1 INCH = 64 MILES.

REFERENCES.

- Boundary of provinces
- Boundary of divisions
- Boundary of districts
- Boundary of Shan States
- Headquarters of districts
- Area under supplementary survey previously ...
- Area brought under supplementary survey for first time during year.

S.S.C.P.O.—No. 505 S.C. & G.L.R. 30-5-07—370 Litho.

LAND RECORDS ADMINISTRATION REPORT

FOR

THE YEAR ENDING 30TH JUNE 1908

RANGOON
OFFICE OF THE SUPERINTENDENT, GOVERNMENT PRINTING, BURMA
1908

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LAND RECORDS ADMINISTRATION REPORT

FOR THE YEAR ENDING 30th JUNE 1908.

Prefatory.

The Department was in charge of Mr. T. C. Wilson, I.C.S., till the 10th November 1907 after which date Mr. H. M. S. Mathews held charge. Prior to this from the 24th September to the 8th November 1907, while Mr. Wilson was on special duty in connection with the preparation of a Settlement Manual, Mr. J. MacKenna, M.A., I.C.S., Director of Agriculture, officiated as Commissioner of Settlements and Land Records, in addition to his own duties. Again, from the 4th March to the 3rd April 1908, Mr. W. E. Lowry, B.A., I.C.S., Deputy Director of Land Records, held charge during the short time while Mr. H. M. S. Mathews acted as Financial Commissioner. Captain T. L. Ormiston, M.A., I.A., *Barrister-at-Law*, officiated as Deputy Director till the 2nd February 1908, when Mr. W. E. Lowry, on return from leave, resumed charge. The Assistant Director, Mr. J. C. Clancey, F.R.A S., was at his post throughout the year.

During the year long leave was given to two Superintendents of Land Records and short leave to six others. In several instances leave had to be refused. At the close of the year three officers were still on leave. Every Probationer, to the last joined, has held district charge, and the services of three *Akunwuns* had to be requisitioned to replace Superintendents for short periods, while a Myoôk was deputed for duty in connection with the survey of islands in the Pakôkku District. Owing to the exigencies of the service, transfers and re-transfers of officers from district to district were again somewhat numerous. There were ten grade promotions, one Probationer was confirmed as Superintendent, and five Probationers officiated as Superintendents. The Department lost by death a senior officer, Mr. D. Hardinge, F.R.G.S., who had done valuable work during his 18 years service.

Demarcation preliminary to Survey.

1. In advance of Cadastral Survey by No. 7 Party of the Survey of India Department, demarcation was undertaken in the Pegu and Yamèthin Districts. In the Pegu District two Demarcation officers were employed for three months in demarcating the tract known as the Sittang accretions and completed the demarcation of 207 square miles at a cost of Rs. 1,336. The work was performed early in the season under trying conditions. In the Yamèthin District an area of 116 square miles, chiefly in the Taungnyo Valley of the Pyinmana Township and partly on the west of Tatkôn railway station, was demarcated, but at no extra cost, by the local Inspectors and Surveyors. The quality of the demarcation work in Pegu is described by the officer in charge of the Survey party as being generally good, while in Yamèthin it is said to have been very imperfect. The preliminary demarcation for the year's survey by special agency in the Akyab District was done by the local Inspectors and Surveyors, and comprised an area of 51 square miles in the Kyauktaw and Myohaung Townships. No charges were incurred on the work. An area of five square miles in the An and Myebôn Townships of the Kyaukpyu District was demarcated by the local staff in December, at no extra cost. The work was reported as good. Demarcation in advance of survey by a special party was continued in Amherst, and an area of 240 square miles, chiefly in the Kyaikmaraw and Kawkareik Townships, was demarcated by two Demarcation officers working for five and half months. An unfinished area of 46 square miles for demarcation will be taken up in the early part of the ensuing field season for next year's survey. The cost of the year's work was Rs. 2,520. The demarcation done is said to have been good. An area of 112 square miles was demarcated in advance of survey by a specia party in the Pa-an Subdivision

of the Thatôn District by one Demarcation officer who worked from the 18th February for a period of four months. The work is reported to have been efficiently performed. The cost of the work amounted to Rs. 885. The Inspector of the Special Survey, with the aid of the local *thugyis* and cultivators, demarcated in advance of the survey, by local agency, without additional cost, an area of 17 square miles, situated in the Sagu, Legaing, and Salin Townships of the Minbu District. The demarcation was checked by the local officers and pronounced correct. In the unsurveyed tract of the Nyaunglèbin Township of the Pegu District some five square miles were demarcated by the local Inspectors and Surveyors in the latter part of the open season for cadastral survey by the local staff. The work is reported as good, and involved no extra expense.

Survey by No. 7 Party, Survey of India Department.

2. No. 7 Party completed the cadastral survey of 637 square miles traversed in the previous year, in the Allanmyo and Minhla Towships of the Thayetmyo District. It also finished, exclusive of 22 square miles of river blocks, the traverse and detail survey of 207 square miles, consisting of the accretions of the Sittang river, in the Thanatpin Township of the Pegu District; the traverse and detail survey of 116 square miles, chiefly in the Taungnyo Valley of the Pyinmana Township of the Yamèthin District; and the cadastral survey of 12 square miles in the Kalateik-Thakan tract of the Bogalè Township of the Pyapôn District.

The year's programme has thus been accomplished, and there is no more cadastral survey work for the party in Burma. No. 7 Survey Party has done continuous and consistently good work in the Province since 1889-90. *It is now to be* disbanded and all original cadastral surveys will be conducted by *local agency* in future.

Revision Surveys.

3. The mapping and area work of the re-surveys done by special staffs last year in Pegu, Pyapôn, Amherst, Thatôn and Hanthawaddy were completed in the recess season. The office work of all these surveys was examined by the Assistant Director and found to be good, particularly that of the Pegu-Pyapôn party.

Revision surveys by special agency were executed during the year in the districts of Amherst, Thatôn, Hanthawaddy, Meiktila, Mandalay, Myingyan, Minbu and Shwebo. The operations in the first two districts were conducted by a special party in charge of a special Superintendent, Maung Pe Maung, and in the others by the local Superintendents of Land Records. With the exception of Hanthawaddy and Meiktila and parts of Thatôn, where revision settlements were in progress, holding marking of the resurveyed areas was done by the Survey parties.

In the Amherst and Thatôn Districts, the original intention was that revision and extension surveys preliminary to settlement should be undertaken by small special staffs working over four years under the local Superintendents of Land Records. In the course of this survey programme it was, however, found that the areas requiring revision were so greatly in excess of the estimates, that completion by the local Superintendents with their limited special staffs was no longer possible within the remaining two years. Sanction was therefore obtained to the employment of the special survey party, on the completion of its operations in the Pyapôn and Pegu Districts. It was hoped that this party would finish in a single season the balance of the revision and original surveys. The party under its Superintendent included most of its former members, but was in part also recruited from the special staff previously employed in Amherst and Thatôn. Surveys were started in the Thatôn and Paung Townships of the Thatôn District, in the west of the Kyaikmaraw Township of the Amherst District, and in the Pa-an Township. Only portions of the surveys in the Hlaingbwè Township of the Thatôn District and in the Kawkareik Township of the Amherst District could be completed by the end of the field season, while the survey in the Amherst and Ye Townships had to be left over. The staff was composed of nine Inspectors, ten sub-surveyors, fifty-six field-surveyors, eighteen draughtsmen, computors, and tracers, and one clerk. The programme of the year's work consisted of the revision survey of 948 square miles containing 182,317 acres of cultivation, and of the original survey of 240 square miles containing 80,590 acres of cultivation.

Practically, the detail survey throughout followed the traverse and worked on skeleton plots. The traverse section completed the survey of 439 square miles, of which 347 square miles represent the work in the unsettled tracts and 92 square miles the area of old *kwins* retraversed. The work included the subdivision of 59 old *kwins* into 204 smaller ones. All theodolite stations were properly marked with clay cylinders or stone prisms. Verificatory azimuths were observed on the new main and minor circuits, and the accuracy of the work was thus well checked. The area traversed in advance, which has not been yet surveyed up in detail, measures 74 square miles. The cadastral section completed the revision survey of 99 square miles with 35,003 acres under occupation in Amherst; 421 square miles with 142,724 acres under occupation in Thatôn, also the original survey of 151 square miles with 32,887 acres under occupation in Amherst, and 140 square miles with 39,895 acres under occupation in Thatôn. The total area done thus amounted to 177,727 acres of revision survey and 72,782 acres of original survey. Although the total area proposed for survey in the original estimates was nearly approached, a considerable area under occupation still remains for survey in the tracts included in the year's programme. This is due to the fact that the actual areas proved to be much in excess of the estimates, both in respect of areas for resurvey, and in the areas for new survey in the unsettled tracts. The estimate gave, as already mentioned, 182,317 acres under occupation for revision survey, and 80,590 acres for original survey, but so far as can be ascertained, the revision area will prove to be 273,882 acres and the original survey 127,424 acres, leaving 96,155 acres of revision survey and 54,642 acres of original survey still to be done. The average size of the field surveyed was 0·52 acre, the cultivation was much scattered and the line-cutting in the new tracts was specially heavy. Every sheet requiring check was *partalled* and the testing was well above the prescribed limit. The work of the party was inspected by the Assistant Director and was found to be of exceptionally good quality and executed entirely on professional lines. The total cost of the survey operations amounted to Rs. 76,357. The cost-rate per square mile for both revision and original survey works out to Rs. 94, a comparatively low figure. The recess work is now well advanced. An excellent season's work was accomplished in spite of numerous difficulties, and credit for these results is primarily due to Maung Pe Maung, the Superintendent in charge of the party, who has conducted the operations with conspicuous ability, zeal, and success. For completing the survey of the area of 150,797 acres remaining for survey in the Thatôn and Amherst Districts at an estimated cost of Rs. 64,000 the special party will be retained. But as this work will not in itself provide sufficient employment for a full party in the ensuing season, it is proposed to employ the party also in the resurvey of Moulmein town, and on revision surveys in the Yamèthin District. The Moulmein town surveys, started under the management of the District Superintendent of Land Records, are not altogether satisfactory, and the Yamèthin surveys will be too much for the Superintendent of that district.

The resurveys by special agency in Hanthawaddy were confined to the Kungyangôn Subdivision and the Insein Township of the Insein Subdivision. The reasons for the revisions of survey are the enormous expansion of cultivation since settlement, and the numerous changes in the field boundaries from the time of the original survey when much of the cultivation was still new. Field work was begun on the 1st December and closed at the end of May. The staff employed consisted of 2 Inspectors, 2 sub-surveyors, 12 field-surveyors, and 2 draughtsmen and computors. The retraversing, inclusive of subdivisions, of 61 *kwins* was completed and also the detail survey of 85 *kwins* containing 70,342 acres of cultivation. The work was well checked by the inspecting staff, and was also examined by the Assistant Director who found it to be on the whole of good quality. The cost of the operations amounted to Rs. 13,267. The Superintendent (Mr. Torrens) as usual, took great pains in the organization of the survey staff. Mr. Torrens has now retired on superannuation after a long career in Government service.

On the advent of a revision settlement party in the Meiktila District, proposals were received for the resurvey by a special staff of large areas. The

reasons for these resurveys were that extensions of cultivation since the original surveys of 1890-5 had been continuous and considerable. Some of the original and settlement surveys, too, were found to be incorrect, and these also were included in the estimates of work to be done. Field work started early in November. The staff was composed of 3 Inspectors, 2 sub-surveyors, 20 field-surveyors, 6 draughtsmen and computors, and 8 tracers. The cultivated area estimated for survey was 70,910 acres, but that actually surveyed amounted to 118,739 acres. Several *kwins* were split up into smaller ones, and 7 of those containing betel-vine gardens were surveyed on the 64-inch scale. The retraversing of 209 *kwins* was accomplished. The sheets were well *partalled*, and the Assistant Director, who inspected the work, found it to be generally of good quality. Owing to the favourable early rains of the year much new land was brought under cultivation, and changes in *ya* boundaries were considerable. The cost of the operations was Rs. 25,275. A total area of about 30,000 acres of cultivation remains for survey. Arrangements are being made for completing the revision survey early next season at a cost of Rs. 6,000. The total acreage is largely in excess of the estimates, but the areas furnished by the local officers were very approximate, and the Superintendent in many cases considered it necessary to include blocks excluded from the estimates. Considerable changes have occurred since settlement in the position and area of *ya* lands and these were included in the survey. It is, however, a question whether accurate survey followed by regular supplementary survey is necessary in large areas where the *yas* are poor and more or less shifting as they are in parts of Meiktila. They might perhaps be omitted from the printed sheets, and a rough annual survey sufficient for assessment purposes might be made instead of attempting to determine the position and accurate boundaries of the *yas*. This proposal is now under consideration.

A revision of survey in the Mandalay Canal tract of the Mandalay District was sanctioned at an estimated cost of Rs. 22,000. Revisions were found to be necessary owing to the expansion of cultivation and the great topographical changes brought about by the Canal system. The cultivated area of the tract is 45,000 acres. The traverse work was started in March and up to the close of the year 30 *kwins* had been retraversed by 1 sub-surveyor employed on the work and the requisite plots prepared by the 3 draughtsmen and computors engaged on the duty. Sixty-one *kwins* have still to be traversed. The detail survey will commence in December next. The cost of the preliminary traversing so far done amounts to Rs. 1,720.

Revision surveys by a staff of 1 Inspector, 6 field-surveyors, and 5 draughtsmen and computors were undertaken chiefly in the neighbourhood of the Kama tank in the Myingyan District. Field work began on the 1st October and office work on the 1st March; the latter is now approaching completion. The area under occupation in which survey was revised came to 18,584 acres. The surveys were thoroughly *partalled* and are described as good. No traversing was done as most of the theodolite stations were found well preserved. The cost of the survey amounted to Rs. 4,833.

In the Minbu District a small staff of two surveyors revised the survey of 7,222 acres of cultivation with which the local surveyors were unable to deal. Field work began on 1st December and the office work on 1st March, lasting for three months in each case. Four draughtsmen and computors were employed on the mapping and area calculation. The cost came to Rs. 649. The surveys were *partalled* by the Superintendent and local Inspectors and reported as very good.

Revision surveys were carried on in the Shwebo District by a temporary staff of 12 surveyors employed for two months in the survey of areas brought under cultivation by extensions of the Shwebo Canal irrigation system. The mapping of these areas was required to facilitate the calculation of the "initial remissions" or exemptions from water-rate and land revenue assessments. A portion of the survey was also done by the regular staff, but the bulk of the work consisting of the survey of 12,483 acres was done by the special staff. As the interior field boundaries were found to be impermanent, the survey was restricted to holding boundaries. The work was checked by the local Superintendent and Inspectors

and is stated to have been good on the whole. The cost of the work was Rs. 1,948.

The annual resurvey of impermanent island cultivation, for assessment purposes, was, as usual, done by special surveyors in the districts of Mandalay, Sagaing, Lower Chindwin and Myingyan. The work was well *partalled* by the inspecting Land Records staffs. In Mandalay six surveyors were at work for six months and surveyed 17,133 acres in island *kwins* of which 8,811 acres were cultivated; the cost of the work was Rs. 1,834. In Sagaing eight surveyors completed the survey of 27,768 acres, of which 13,626 acres were cultivated, at a cost of Rs. 752. Besides this, two extra surveyors were engaged for a period of two months on the resurvey of areas needing revision in the inundated tract; they finished the survey of 1,190 acres at a cost of Rs. 189. In Lower Chindwin two surveyors in two months surveyed 6,127 acres, of which 3,285 acres were cultivated; the cost was Rs. 200. In Myingyan, ten surveyors were employed for three months and finished the survey of 18,981 acres, of which 10,812 acres were assessed; the cost amounted to Rs. 2,437.

Extension Surveys.

4. The recess work of the field surveys executed in 1906-07 by local agency in the districts of Akyab, Kyaukpyu and Tharrawaddy was completed and the maps were printed. The office work in Tharrawaddy was inspected by the Assistant Director and found on the whole to be of good quality. In the year of report extension surveys by special parties under the supervision of the local Superintendents of Land Records were continued in the three districts above-named. Similar surveys were also conducted in Minbu and in parts of Amherst and Thatôn. The surveys were confined as much as possible to cultivation, hills were excluded, and as little jungle and included waste taken in as was consistent with absolute requirements. The proportion of cultivation to waste for the whole surveyed area of all six districts is as 1 : 1·36; but in Amherst the area of waste is about double and in Kyaukpyu just over one-half of the cultivation.

This was the third year of the 4-year programme for the survey of cultivated blocks in the unsettled tracts of the Akyab District. The operations were confined to the north-west of the district in the Kyauktaw and Myohaung Townships, though a small portion of the Minbya Township was also taken up in the year. The staff employed on the work consisted of one Inspector, two sub-surveyors, six field surveyors, two draughtsmen and computors, and one clerk. Altogether 110 square miles of country were traversed, consisting of six major and three minor circuits. All the circuits were duly connected with the older main circuits and the requisite number of verificatory azimuths observed. Owing to the time occupied in the encircling of blocks prior to their being broken up into *kwin* traverses, and in the subsequent computations, it was not found possible in all cases to provide skeleton plots for the detail survey which had thus to be partly done on the triangulation system and the work ultimately brought on to the regular plots. The area cadastrally surveyed was 44 square miles, containing 11,845 acres of cultivation. The survey was undoubtedly difficult, the fields were generally small, of an average size of 0·10 acre, and the cultivation mostly scattered and in valleys on the borders of the district. The staff suffered from the effects of malarial fever, and also received insufficient help from the villagers. In consequence, about 3 square miles of the area for survey in the year was not completed and will have to be taken up next year. The survey sheets were well *partailed*. The Assistant Director inspected the work and found it to be of a professional standard. The cost of the operations was Rs. 8,815. The Superintendent, Mr. Körper, gave the survey particular attention and helped it on in all directions. A good season's outturn was obtained at a reasonable cost. The recess work is now in hand. The estimated area for survey next season, the last of the four years of the original programme, is about 47 square miles.

This was the second season of the cadastral survey of cultivated blocks bordering on the older surveyed tracts in the Kyaukpyu District. The work of the year was situated solely in the An and Myebôn Townships. The staff comprised one Inspector, two sub-surveyors, four field-surveyors, two draughtsmen and computors, and one clerk. The traverse section completed the traversing of

21 square miles and the cadastral section the detail survey of 34 square miles containing 13,440 acres of cultivation. Check azimuths were observed where required in the outlying areas to test the accuracy of the traverses. The detail survey was thoroughly *partalled*. The survey was by no means easy, the *kwins* were scattered, the cultivation was in straggling patches, the fields were mostly small and irregular, and communications were difficult. The Assistant Director examined the work on the ground and found it good, though some of the topography of distant creeks was of doubtful accuracy. The cost of the operations amounted to Rs. 9,714. The work of the recess is in progress.

The 2-years programme of original cadastral survey in the Tharrawaddy District which was begun last year was brought to a close this year. The tracts for survey were situated at the foot of the hills along the left bank of the Myitmaka river, bordering in both cases on old surveys. The staff consisted of 1 Inspector, 2 sub-surveyors, 4 field-surveyors, and 3 draughtsmen and computors. The area traversed was 40 square miles, and that cadastrally surveyed was 43 square miles of which 12,030 acres were under cultivation. Azimuths were observed at the necessary points and connections effected with adjoining Great Trigonometrical stations. There was a good deal of sickness among the staff, and there were two casualties among the followers. The detail surveys were well checked. The Assistant Director inspected the work which was found to be of a correct type. The programme was unfortunately not finished. Five *kwins* still remain for survey and 2 *kwins* have to be redone. The programme of the year should have been completed without much difficulty. The cost of the survey was Rs. 10,544.

In the Minbu District some surveys of cultivation, outside the settled tract, were undertaken in the year. An area of 17 square miles was traversed and also cadastrally surveyed. The area under cultivation was 6,178 acres. The staff employed on the work was composed of 1 Inspector, 2 sub-surveyors, 4 field-surveyors, and 4 draughtsmen and computors for short varying periods. The Assistant Director inspected the field work which was of decidedly good quality. The cost of the survey amounted to Rs. 1,439.

The cadastral survey of new tracts in the Amherst and Thatôn Districts is dealt with in paragraph 3.

Town Surveys. Statement IV.

5. The demarcation and survey of important railway and other towns were again continued during the year. The work was executed by special staffs under the control of the local Superintendents of Land Records. In all but two cases, those of Magwe and the Upper Chindwin, the detail surveys were based on theodolite traverses. In large-scale surveys great precision is demanded, and plane-table survey of themselves are worthless where extreme accuracy is essential for minute assessments and for determining encroachments. The surveys, all on the scale of 64 inches to the mile, have generally been of a professional standard, and are for the most part geographically fixed. The demarcation has not been altogether satisfactory. The demarcation officers were usually careful to see that house sites were properly demarcated, but they often failed to follow the prescribed procedure for dealing with encroachments and disputed boundaries, and the special and general reports were frequently not submitted. The defects in procedure are now being rectified as far as possible. The cost of demarcation pipes was recovered from the occupiers of sites, and there has been, taken all round, no loss to Government on this account. Budget provision is being made to meet the cost of constructing masonry pillars for the protection of the important theodolite stations laid down in the course of survey operations in towns. The charges for these, like the cost of the original surveys, will be met wholly by Government, charges for the subsequent maintenance of these marks will be treated as a supplementary survey charge, and debited in equal proportions to Provincial revenues and to the Local Fund concerned. Some progress was made with the preparation of town lands rolls, but at several centres it was slow. Delays occurred, chiefly because the Tenure or Revenue Officers had also to attend to their ordinary duties. In only two instances, Pegu and Prome, were special officers appointed for the preparation of the rolls, elsewhere

Superintendents of Land Records for district headquarters, and Subdivisional and Township Officers for subdivisional and township headquarters were entrusted with this duty. In Toungoo, Ma-ubin, and Pyapôn special officers are proposed for the work. Details of the demarcation and survey operations of the year are given in Statement IV attached to this report. There were altogether 13 Demarcation Officers at work in 31 towns. The total area demarcated was 32·89 square miles, at a cost of Rs. 8,048. Surveys were conducted in 32 towns altogether, belonging to eleven districts. The area traversed consisted of 36·60 square miles, while the area cadastrally surveyed was 36·07 square miles. For the mapping and area work during the recess 52 men were retained for varying periods. The cost of the survey operations, including both field and office work, amounted to Rs. 42,234. The office work of the surveys completed last year was duly finished in the recess months. The map sheets and computations were inspected by the Assistant Director for almost all the surveys, and the work was found to be generally of a high order.

In Akyab the survey of Akyab town had been previously done and the preparations of the rolls has been nearly completed. The operations under the Boundaries Act have yet to be undertaken. In Rangoon town the demarcation of the Bahan area was done last year, but the question of the survey is in abeyance pending the transfer of the block from the Cantonments to the Municipality. The traverse survey of Sandoway town of the Sandoway District was done last season, and the demarcation and survey were completed in the year. The work was checked by the Assistant Director, and was not quite of the best. The demarcation and survey of the remaining nine towns in Hanthawaddy unavoidably deferred last season, were taken up in the year. The towns were Insein, Ôkkan, Taikgyi, Twantè, Kungyangôn, Kyauktan, Thôngwa, Thabyegan and Kayan. Demarcation and survey were checked by the Assistant Director in two towns and by the Deputy Commissioner in two others, and the results were considered satisfactory. The demarcation generally was, however, subsequently declared to be defective, as the prescribed procedure had not been followed and no proper comparison made with the original leases, particularly in Syriam town. It is proposed to revise the demarcation before the publication of the maps and to correct the original sheets and statements to the extent required by alterations of boundaries. The recess work is making headway. In Pegu the demarcation and survey of Hlègu had been arranged for, but owing to want of budget provision the work has been left over. The other 18 towns of the district had already been surveyed. The town lands rolls of these are still in the hands of the special Tenure Officer (Mr. Thomas). The towns of Tharrawaddy were surveyed in the preceding year, but portions of two towns, Letpadan and Ôkpo, which had been destroyed by fire, were re-surveyed by the permanent town surveyor. The tenure work is in progress. The survey and demarcation of six towns in Prome were done last year, and the traverse survey only of Prome town. The detail survey of this town was completed in the year and was inspected by the Assistant Director. The work was distinctly good, though the agricultural portions might have been mapped with advantage on the 32-inch instead of the 16-inch scale. The theodolite stations were protected by small masonry pillars at a cost of Rs. 1,140. The tenure enquiry by a special officer has been finished for one town and is in hand for another. The preparation of the town lands rolls has not yet been done. The Superintendent (Mr. Johnson) has helped the work all round and understands what is necessary. The survey of the five towns in Ma-ubin was completed in the two previous seasons and the maps have been printed, but the numbering adopted on the sheets has not been in accordance with the orders. The tenure enquiry makes slow progress; the town lands rolls of Ma-ubin town alone are ready. A special officer is asked for here for the tenure enquiries and completion of the rolls. The surveys in Pyapôn had been done before, and the tenure work was finished. The town lands rolls of Pyapôn town have now been completed and progress is being made with the others. No new town surveys were undertaken in Henzada during 1907-08. The town lands rolls of nine towns were completed last year and the rolls of the remaining town of Zalun will probably be ready shortly. In Myaungmya the surveys were completed in the previous

season. The tenure work of three towns is in hand, and the rolls of three other towns have been completed. The town of Toungoo in the Toungoo District was surveyed in 1897-98 by a Survey of India party. In the year of report eight other railway towns, *viz.*, Kanyutkwin, Pyu, Nyaungchidauk, Kywèbwè, Ôktwin, Yedashe, Swa and Myohla, and one non-railway town, that of Shwegyin, were demarcated and surveyed by special agency. The demarcation of Pyu was defective and about half had to be done again. The demarcation of Thandaung hill station was also completed. A 16-inch scale map of this station with the contours well shown exists, but it is proposed to resurvey it on the 64-inch scale. Estimates have been framed, but the agency by which the survey is to be done has not been decided and final orders are awaited. The traverse and detail survey of the nine towns taken up in the year was examined by the Assistant Director and found to have been well executed. In Thatôn the survey of four towns was completed in the two previous seasons. In the year of report the intention was to demarcate and survey the towns of Pa-an, Hlaingbwè, Martaban, Hninpalè and Môkpalin, but owing to the late receipt of sanction it was only possible to finish the first three towns. The Assistant Director inspected the work at the start and found it was being conducted on correct lines. In Amherst the survey of one town was done in 1906-07. During the year of report the demarcation and survey of Amherst town were completed. The work was checked and found satisfactory by the Assistant Director. The recess work of the survey is getting on. Moulmein town was surveyed in 1892-93 by a Survey of India party, but the maps were not kept up. Numerous changes have taken place since then, and the town has also extended. A scheme was therefore framed for the resurvey of a portion of the town on the 50-feet scale, and for a fresh survey on the 50-feet and 100-feet scales of other portions previously done on smaller scales. Owing to the late receipt of sanction the bulk of the demarcation and the whole of the survey have been postponed to next season. Some of the demarcation and the examination of leases have been done, but this work is now to be continued on a more comprehensive scale on fresh lines. The traverse work of two divisions of the town was attempted, but it was done on wrong lines, and has been rejected. Fortunately the expenditure (Rs. 1,034) was inconsiderable. As mentioned in paragraph 3 it is now proposed that the Amherst-Thatôn Revision Survey party should undertake the town survey. The survey of Tavoy town in the Tavoy District was done in former years. The quality of the survey of Palaw and Mergui towns of the Mergui District was questioned and the Assistant Director visited Mergui and enquired into the matter. The demarcation of both towns was untertaken in 1905-07, and was well done. The survey of Palaw was completed in 1904-05. It was based on theodolite traverse and was of sufficiently good quality. The survey of Mergui town was started by the Deputy Commissioner in 1902-04, on the enormous scale of 33 feet to the inch, instead of the standard one of 64 inches to the mile (82½ feet to the inch). The survey was practically only a plane-table one, indifferently executed by indifferent surveyors and with insufficient supervision. The cost to the Municipality was Rs. 1,430. This survey is altogether unsatisfactory, and though the maps have been printed the survey must be redone on proper lines. The cost to Government was trifling, *viz.*, Rs. 617. Detailed proposals for a fresh survey of the town, on the 64-inch scale, are now before the Government and orders on the project are awaited. The demarcation and survey of Thayetmyo and Allanmyo towns were completed in the year. The work was examined by the Assistant Director and was of decidedly good quality. The Superintendent (Mr. Thomas) closely supervised the operations. The town of Pakôkku in the Pakôkku District was originally surveyed in part on the 64-inch and in part on the 16-inch scales. The surveys of both sections were revised in the year on the original scales, preceded by regular demarcation. The town lands rolls have been practically completed. The cost of the combined work was Rs. 2,134. The Assistant Director examined the work and found it to be well done. In Magwe the town of Taungdwingyi was demarcated and surveyed in detail in the year, the traversing having been done the year before. The survey was done by the permanent town surveyor. The town surveyor also prepared the town lands roll of Yenangyaung, and brought up to date the map of

Magwe town previously surveyed by plane-table only. In Mandalay the towns of Maymyo and Mandalay were surveyed in previous years. In Katha three towns were surveyed before and proposals have now been made for the survey of three others, *viz.*, Indaw, Mawlu and Môhnyin, all on the railway line. In Shwebo, 16 railway and other towns were previously surveyed. In Sagaing three towns were surveyed before; of two of these the town lands rolls were completed previously, and of one in the year. The demarcation of Mônywa and Alôn in the Lower Chindwin was done the year previous and the survey in the year of report. Checks applied to the survey work showed it to be of fair quality, though in parts it had to be redone. Field work was examined by the officiating Commissioner of Settlements and Land Records, who noticed 4 to 8 links errors in places in the width of roads, throwing considerable doubt on the general accuracy of the work. On the whole, the work is of passable quality. The demarcation was well done. The survey should have been better looked after by the Superintendent (Mr. Connor). The recess work is in progress. In the Upper Chindwin three towns were surveyed last year by plane-table alone; and this year the town of Homalin was similarly surveyed. An attempt is being made to patch up the bad survey of Mingin town. If the work is to be redone, a theodolite traverse should be first made and the detail survey done entirely on new skeleton plots prepared in the orthodox manner. It is proposed to demarcate and survey properly five towns in Kyauksè previously surveyed on various scales by plane-table only. The work is to be undertaken in 1909-10 and the necessary budget provision has been sanctioned. In Meiktila the four notified towns of Meiktila, Thazi, Mahlaing and Thèdaw were surveyed by the Survey of India Department in 1893-94, on the scale of 32-inch for Meiktila and of 16-inch for the other three towns. But the plans are useless now owing to complete changes due to fires, extensions, and other causes. About 1900-01 large scale surveys by plane-table only were executed by the town surveyor and since then patch-work surveys have been carried on by the same surveyor. The scales of these surveys are 40 feet and 80 feet. The existing maps, though good of their kind, do not meet requirements, and a proper survey on the 64-inch scale, based on theodolite traverses, is wanted. Formal proposals for a regular survey have been submitted for orders. In Yamèthin a previous survey by plane table only was made of the towns of Pyawbwè, Yamèthin, Êla and Pyinmana. Resurvey based on regular traverses is necessary. Demarcation was done but fresh and proper demarcation is required. Estimates have been prepared and sanction obtained for proceeding with the demarcation and survey in 1909-10. In Myingyan the demarcation and survey of Myingyan and Nyaung-u towns were completed last year and the town lands rolls prepared this year. The Assistant Director visited Myingyan town and examined the work. The permanent survey marks require protection. The survey and mapping were well done and quite of a professional type.

Fishery Surveys.

6. The demarcation and survey of fisheries in the Pyapôn District remaining over from last year's programme was all but completed in the year. A Demarcation Officer was employed to demarcate 46 fisheries situated in the Pyapôn and Bogale Townships of the Pyapôn District, and also one fishery in the Ma-ubin Township of the Ma-ubin District. The work was completed and is reported to have been well done, though it was impeded at times by the lessees failing to point out their boundaries. The survey was executed by a staff of two Inspectors and 12 surveyors. Out of 130 fisheries for survey, 129 belonging to the Kyaiklat, Pyapôn and Bogale Townships were duly mapped, while one which belonged to the Ma-ubin District was left undone. The survey was on the scale of 4 inches to the mile, and the area of the fisheries was 6,564 acres approximately, including turtle banks. The surveys were on the 4-inch scale and for the most part were done with the plane-table and based on the printed 16-inch maps. The surveys were checked in a number of cases by the Superintendent (Mr. Nolan). The quality of the work is described as satisfactory. The cost of the demarcation amounted to Rs. 615 and of the survey to Rs. 7,716; in all, Rs. 8,331.

In Katha four of the local surveyors were taken off their regular work for the space of a month to survey fisheries. They surveyed six fisheries having an area

of 4,402 acres. There are said to be altogether 185 fisheries in the district for demarcation and survey. For this work a special staff is needed.

Potta Surveys.

7. The survey of *pottas* is confined to Lower Burma, and during the year operations by special agency were conducted in 12 districts. In five districts survey establishments were entertained on regular pay, and in the others payment was made on the piece-work system. The total number of cases dealt with was 5,162, the area surveyed comprised 49,720 acres, and the cost of the operations amounted to Rs. 25,369. The largest issues were in Kyaukpyu, Myaungmya, Toungoo, Amherst, Akyab, Pyapôn and Thatôn. The average size of a grant was nearly 10 acres. The staff engaged on the work consisted, in all, of 8 Inspectors and 63 surveyors, working for periods varying from four to eight months. The fees realized amounted to Rs. 24,584, at annas 8 per acre, except in Thayetmyo, where the rate levied was annas 6. In all cases where the contract system was in force, the fees covered the cost of the survey, while when regular pay was given, with the exception of Toungoo, the cost was in excess of the fees realized. It was never the intention that Government should suffer a loss in the conduct of these surveys, and where the ordinary limit of fee, *viz.*, annas 8 per acre, is for good reasons found insufficient, the rules provide for an enhancement of the rate. The average cost rate for piece-work was 7 annas 1 pie, and for work on fixed pay 10 annas 2 pies per acre; the average rate for either class of work being 8 annas 5 pies. The rates in Mergui and Amherst were excessive, being 15 annas 8 pies, and 13 annas 7 pies, respectively; they were also high in Pyapôn and Thatôn where these were 10 annas 7 pies and 9 annas 11 pies, respectively. Superintendents of Land Records checked the surveys wherever they could, as also did the local Inspectors, where there were no special Inspectors, though in Toungoo the former helped the latter in the inspections. In Tavoy, however, the Deputy Commissioner came across cases where a want of inspection necessitated re-surveys. Special *potta* Myoôks were appointed for the disposal of grant cases in Toungoo, Amherst and Thatôn.; in the other districts this work was performed for the most part by the Township Officers. In the Pegu District, in consequence of the suspension of the issue of *pottas*, no grant surveys were undertaken. In Kyaukpyu the Deputy Commissioner reports that the plans were as a rule "made out badly"; for this the Superintendent must be held responsible. In Pyapôn many of the applications for grants were on enquiry by the Township Officers found to be fraudulent and were therefore rejected. In many instances also absence of demarcation by the applicants prevented surveys, and in consequence, the programme was curtailed and the establishments reduced. On the other hand, an extra Inspector had to be temporarily taken on to work off arrears of cases for inspection, including those remaining over from the previous year. In Myaungmya the contract fees were divided equally between the Surveyor and Inspectors. The cost of survey here was greater than the receipts of the year, but the difference was met from the deposits of the year before. The surveys are said to have been in many instances faulty. The *potta* system has been abandoned and squatting has been permitted in the Hlaingbôn tract falling in the unsurveyed area. The intention is to survey this tract when cultivation is established in the course of the next six or eight years. In Toungoo very good work was done owing to the exertions of the Superintendent (Maung Kyi O). In Thatôn, the arrears of *potta* work in the Pa-an Subdivision have now been cleared off, and it is intended from next year to introduce the piece-work system into this area. In Amherst the grants were chiefly in the Kyaikmaraw Township and the whole of the surveys were practically completed. The majority lay in the unsurveyed tracts. In Tavoy all grant cases were given out direct to the surveyors, to save time. The Deputy Commissioner noticed several inordinate delays and omissions in relation to the work. In Mergui the system of piece-work was charged to that of fixed salaries, but the cost rates were abnormally high, due in great measure to the difficulties of locomotion, the scattered nature of the work, and other causes; but higher fees should be levied when circumstances demand it. The quality of the survey was not always found good.

Area under, and cost of, Supplementary Survey. Statement I.

8. The total area under Supplementary survey during the year was 47,541 square miles, showing an increase over last year of 71 square miles. Extension surveys were responsible for increases in the following districts:—Akyab 20 square miles, Kyaukpyu 20 square miles, Tharrawaddy 44 square miles, and Pegu 18 square miles, of which, however, one square mile is due to the transfer of one *kwin* from Toungoo. The transfer of an island from Pakôkku which is not yet under supplementary survey accounts for an increase of one square mile in Myingyan. In the Lower Chindwin there is a decrease of 23 square miles due to revised figures only, and not to any change in the area under supplementary survey, and in Thatôn of 8 square miles due to erosion. The total assessment for the year amounted to Rs. 2,62,20,575 compared with Rs. 2,54,81,253 in the previous year, an increase of Rs. 7,39,322 despite decreases of Rs. 1,81,824 in Sagaing, Rs. 1,48,631 in Meiktila, Rs. 1,23,684 in Myingyan, and smaller amounts aggregating Rs. 2,26,013 in other Upper Burma Districts owing chiefly to the unfavourable character of the season. In the following districts there were increases of revenue due to additional areas being brought under Supplementary survey as well as to the ordinary expansion of cultivation:—Akyab Rs. 45,326, Kyaukpyu Rs. 10,927, Pegu Rs. 73,409, Tharrawaddy Rs. 54,973. The following districts yielded additional revenue owing to enhancement of rates as well as to the natural extension of cultivation:—Prome Rs. 29,841, where intermediate rates have given way to full rates in 100 *kwins*; Ma-ubin Rs. 1,26,020, Pyapôn Rs. 1,94,894, Myaungmya Rs. 71,752, where Revision Settlement rates have come into force in the Ma-ubin Township, Kyaiklat Township, and Kyaikpi Township respectively. Henzada shows an increase of Rs. 33,065 where full rates have displaced intermediater ates in the Ôkpo and Kyangin Townships; Mergui also shows an increase Rs. 94,268 owing to the introduction of Revision Settlement rates throughout the whole of the settled area of the district. Shwebo has an increase of Rs. 3,58,702 owing to the introduction of settlement rates throughout the district with the exception of the Shwebo canal area.

The cost of Superintendence and inspection has increased from Rs. 4,44,146 to Rs. 4,56,806, *i.e.*, from Rs. 9·36 to Rs. 9·61 per square mile, and of the Survey Staff from Rs. 7,28,506 to Rs. 7,71,414, *i.e.*, from Rs. 15·35 to Rs. 16·23 per square mile. Apart from special causes affecting individual districts, there is a general increase owing to the revision of the Travelling allowance rates granted to Superintendents and Probationers of Land Records, and to the grant of privilege leave to the subordinate staff. Increased establishments were sanctioned in Kyaukpyu, Henzada and Myaungmya (Village Headman Scheme), Mergui, Thatôn and Pyapôn (additional Revenue Surveyor), Bassein and Tavoy (Town Surveyors), Toungoo (additional Inspector), Amherst (temporary office establishment), Magwe (second Record-keeper), Sagaing (extra island Surveyors), and Yamèthin (second clerk). The cost per acre of occupied land has risen from annas 1·247 to annas 1·280, and the percentage of the assessment has increased from 4·60 to 4·68.

Submission of Assessment Rolls.

9. In Hanthawaddy eight of the *kaukgyi* (winter crop) assessment rolls were late, the last being submitted on February 28th. In Toungoo one roll was received on February 24th. In Thatôn a surveyor was removed in consequence of his conduct in neither completing his roll himself nor obeying orders to hand them over to the Inspector to be completed with the help of the rest of the staff; the rolls were eventually submitted 11 days late. In Tavoy one surveyor was nine days late owing in part to having to attend the Deputy Commissioner on *kwin* inspection for two days and also to attending at the Township Officer's court as witness. In Mergui six rolls were late, the last being submitted on February 25th. The delay was partly due to the late arrival of the steamer from Victoria Point, partly to the Township Officer, Tenasserim, having taken the Revenue Surveyor out on remission cases, and partly to the inexperience of some of the surveyors.

In Lower Burma, there are but few *kaing* (island) or *mayin* (spring rice) rolls: of these one roll was a fortnight late in Ma-ubin owing to survey difficulties

chiefly. In both Tharrawaddy and Thatôn one roll was more than a month late, in the one case because of doubtful jurisdiction, and in the other because the the roll was accidentally sent to the Record Room instead of to the *Akunwun*. In Minbu the *kaukgyi* rolls of one circle were late owing to sickness of the surveyor. In Magwe the rolls were late for every season, but there is an improvement on last year: a further increase of establishment is being applied for. In Mandalay a number of rolls were late, but none exceeded a week except the *mayin* rolls of two charges where the Revenue Surveyor was under suspension and the *kaukgyi* rolls of two charges where the work was rejected by the Superintendent. In Shwebo the *kaukgyi* rolls were not all in till the end of February owing to insufficiency of staff. In the Lower Chindwin District and in Yamèthin, Myingyan and Meiktila a few rolls were less than a week late. In addition, in the Lower Chindwin one *kaukgyi* roll was twenty days late owing to heavy failure marking, and one *kaing* roll eighteen days late. Both this year and last year the number of Lower Burma Districts in which the latest rolls were not submitted punctually has been eight. In Upper Burma last year all the rolls were submitted on or before the due date in three districts only. This year there were no late rolls in the following districts: Thayetmyo, Katha, Sagaing, Upper Chindwin and Kyauksè. Attention has been called to the various ways in which the surveyor's time is wasted and every effort is being made to lessen the waste. The greater punctuality of the rolls this year shows that these efforts have not been entirely vain.

Offices and Record Rooms.

10. The new section 22A of the Lower Burma Land and Revenue Act imposes on all cultivators the same obligations in the matter of reporting transfers of land as exist in Upper Burma. Both in Lower Burma and in Upper Burma increased attention is being given to this matter, and transfers are reported more freely than in the past though there is still roomfor great improvement. In several cases in Lower Burma the Sub-Registrars have failed in their duty of informing the Land Records Department of registered transfers.

Several offices of Inspectors, Circle Thugyis and Revenue Surveyors were destroyed by fire during the year. In Akyab the office of the Thugyi, Thamihla Circle, was burnt and all Government property destroyed. In Pegu the office of the Revenue Surveyor, charge No. 57, where a copy of Settlement Registers and six years' Supplementary Survey Registers were destroyed. In Tharrawaddy the office of the Thugyi, Kyettaik Circle, where Records and instruments of three *thugyisayes* were almost entirely destroyed. In Pyapôn the office of the Revenue Surveyor, charge No. 7, where some instruments were damaged but Records were saved by the prompt assistance of the villagers. In Henzada the office of the Inspector where all records were saved. In Minbu the offices of the Revenue Surveyors, Sagu, Kywèdè and Pyogingôn, the first fire being incendiary. Lists of Government property destroyed have not yet been received. Last year there was an incendiary fire at Sagaing. In Magwe the office of the Revenue Surveyor of Magwe where all Government property was destroyed. In Mandalay the office of the Inspector and Revenue Surveyor, Madaya, where almost all Government property was destroyed, and the office of the Revenue Surveyor, Tôngyi, where Government property was rescued by villagers. The Deputy Commissioner, Pegu, suggests that a fire-proof office should be provided at the township headquarters for the Inspector and his staff. It would, however, be a mistake to centralize at township headquarters. The Revenue Surveyor's house and office should be established in his charge. In several districts it has been noted that Revenue Surveyors are beginning to provide substantial houses for themselves where there is little danger of records being destroyed. It is proposed to encourage Revenue Surveyors to take house-building advances and to restrict transfers as much as possible. In the reorganisation proposals now being drawn up it is suggested that a small office allowance should be given to every surveyor who provides suitable office accommodation in his house. If the village headman is required to provide proper sites, the buildings should be fairly safe. Even under present conditions the loss of ten surveyors' offices is not great considering that there are over 1,500 of these officials. Of course permanent records intended for the Record Room should be withdrawn from the surveyors' offices as quickly as possible. In Akyab the

necessary alterations in the Record Room are proceeding very slowly, and in Kyaukpyu certain additions are required in the new Record Room. The rearrangement of records in Pegu is approaching completion, but in Tharrawaddy the publication of the Land Records Manual is awaited. In Prome also rearrangement is contemplated. The ante-room required for the Record Room in Bassein has not yet been provided. In Amherst the records have also to be moved from their present position. In Tavoy racks have not yet been provided for want of funds. In both Thatôn and Magwe no satisfactory permanent Record-keeper has been obtainable. In Mandalay the rearrangement of records in accordance with the new numbering of *kwins* is finished. In Shwebo the Record Room is just being arranged for the first time after the completion of the settlement. In Sagaing, on moving into the new Record Room, the records were arranged on a new plan which is now being considered with a view to its general introduction throughout the province whenever for any cause the necessity of rearranging records arises. The Commissioner of Settlements and Land Records, and Deputy Director, and Assistant Director inspected 25 Record Rooms.

Maintenance of the Survey.

11. The total number of *kwins* in which revisions or extensions of cultivation were resurveyed by the local surveyors comprised 251,833 acres, of which 226,652 acres were under cultivation. The surveys were mostly of portions of *kwins*, and often consisted merely of insignificant internal charges in holdings and of minor extensions mapped on the supplementary survey sheets of the year. A total area of 3,666 acres of grants were also surveyed by the permanent staff. No extra cost was incurred in these revision and grant surveys. There remain for resurvey in all 2,103 *kwins*, *viz.*, 1,105 wholly and 998 in part, with an area of 1,110,054 acres. Most of this represents work intended for special staffs, *e.g.*, in Akyab, Yamèthin and Meiktila, while in several instances the areas are not yet ripe for survey.

In Akyab, out of the large area requiring resurvey, the local staff is expected to do some 7,000 acres. In the year the local surveyors revised the survey of 1,126 acres, and also surveyed 395 acres of large extensions. In Kyaukpyu 20,293 acres are said to require resurvey, and it is proposed that the whole of this should be done by special agency, as the local surveyors are unable to attend to the work. In Sandoway the local staff surveyed 1,062 acres of grant lands. In Hanthawaddy there are large areas needing revision, and these are being taken up by a special staff. The local surveyors in the year completed the detail survey of part *kwins* to the extent of 3,121 acres. In Pegu the large area of 30,551 acres, of which 27,580 acres were under occupation, was revised by the local surveyors, and the work is stated to have been thoroughly checked and found good, a result very creditable to the Superintendent (Mr. Beechey). Besides the above, an area of 6 square miles was cadastrally surveyed in the unsettled tracts in the north-west of the district. In Tharrawaddy 13,544 acres, chiefly *kaing* and island cultivation, were surveyed by the local staff. In Prome an area of 2,039 acres, of which 1,648 acres were under cultivation, were resurveyed; 135 acres of extensions were also surveyed. In Ma-ubin an area of 325 acres was resurveyed and grants covering 569 acres and extensions of cultivation amounting to 4,902 acres were also done by the local staff. In Pyapôn six temporary holding-markers, with the assistance of local surveyors, completed in three months the marking of holdings, and working out of areas, and preparation of connected registers in respect to 107 *kwins* with a total occupied area of 28,352 acres. The work was found defective in places. The cost of operations was Rs. 705. The local surveyors also did 1,739 acres of large extensions, but no special revision surveys were undertaken in the year. They likewise surveyed 633 acres of grant lands. In Bassein 4,759 acres, of which 3,654 acres were in occupation, were resurveyed. The further areas requiring resurvey are inconsiderable. The permanent staff surveyed, in addition, 313 acres of grants. In Henzada 29,220 acres, inclusive of 3,106 acres of waste, were resurveyed for the most part by special surveyors at the expense of the responsible Circle Thugyis. Further resurveys of some extent will be needed later on. An area of 341 acres of grant land was also surveyed by the regular staff. In Myaungmya partial or

entire *kwin* revisions of survey were completed of 15,805 acres, of which 13,148 acres were under cultivation. In Toungoo large extensions covering 9,646 acres of cultivation were surveyed and 4,984 acres revised by the local surveyors. In Thatôn, the local surveyors, helped by two extra surveyors annually entertained for the field season, revised the survey of 22,061 acres of cultivation, and also surveyed 4,684 acres of large extensions, besides the mapping of 5,010 acres of scattered holdings. A large proportion of the resurveys was executed on sectional sheets. The revisions were extensive and reflect credit upon the Superintendent (Mr. Carrapiett). The quality of the revisions proper is described as good and of the extensions as fairly good. In Amherst 18,871 acres were revised of which 15,809 acres were under cultivation. The work is said to be good. Traversing to the extent of 1½ square miles was also done. The Superintendent (Mr. DeSouza) has shown energy in the conduct of these surveys.

In Tavoy 1,590 acres were revised in survey. About 5,000 acres still remain for resurvey, which it is anticipated will occupy three years to complete. The local staff also surveyed grants to the extent of 1,857 acres, which were duly checked. In Mergui the local staff surveyed 439 acres of grants and leases. In Magwe 6,519 acres, chiefly of *ya* land were newly surveyed, and most of the extensions checked by a system of 'rough measurements.' In Mandalay a half-yearly temporary staff of three surveyors resurveyed 13,302 acres, all of which were properly *partalled*. This work was taken up in addition to the annual revision of impermanent island cultivation and changes and extensions in the Mandalay canal tract for which this staff is specially provided. The cost of this staff was Rs. 832. The permanent staff surveyed 266 acres of leases. Minor revision surveys consequent on the expansion of irrigation in the canal tract to the extent of 6,003 acres were taken up by the local surveyors and an area of 544 acres outside the settled tract was also surveyed. In Katha two extra surveyors on the staff surveyed 1,266 acres of extensions, mostly in the Mohnyin valley. The work of one surveyor was unsatisfactory and the outturn was inadequate. In Shwebo the permanent staff surveyed 6,285 acres containing 4,098 acres of cultivation in the Shwebo canal tract, where owing to the construction of distributaries and water-courses and extensions of cultivation into waste, topographical changes will continue to be heavy till the canal is in full working order. In the Lower Chindwin 3,232 acres were surveyed including extensions in the *ya* tracts and ordinary revisions. In the Upper Chindwin 328 acres of extensions of cultivation were surveyed, but only 125 acres of this were mapped in detail. The local staff finished the revision survey of 12,508 acres. In Yamèthin the survey of 28,414 acres of extensions and changes was revised.

Preservation of permanent Survey marks.

12. In Pegu 74 headmen have failed to submit annual reports, but excluding these charges 11,573 marks are reported as missing. Surveyors found 1,069 marks missing out of 6,148 visited, and replaced 513. The experience of special survey parties proves that whilst broken marks can be replaced, little reliance can be placed on replacements where the marks have been lost entirely. Fresh orders on the subject of replacement and abandonment of missing marks are under consideration. In Tharrawaddy the Karen villagers are reported to protect survey marks with very substantial mounds and bamboo gabions, but in Prome village headmen are reported to take no interest in the subject despite frequent orders. In Pyapôn and Bassein the laxity of the headmen is also commented on; in Myaungmya, however, the reverse is the case. In Henzada the offenders have been punished and in Myaungmya and Toungoo warned. In Thatôn attempts to arouse headmen to a sense of their duties have not been completely successful. In Amherst the unreliability of replaced marks is commented on and also the loss of marks in the more remote circles. In one circle more than half the marks were searched for and only 11 per cent. found. In Magwe out of 955 headmen only 228 furnished their annual reports: the remainder are being called on to explain. In Mandalay, Lower Chindwin and Katha some improvement is reported. In Shwebo pipe maps are being prepared. In Myingyan thugyis as a rule take an interest in the preservation of marks.

Miscellaneous duties, including check of tax-tickets, demarcation of grazing-grounds, preparation of small scale maps, and issue of land-holders certificates.

13. In Pegu one error of Rs. 10 was discovered on a tax-ticket. In Ma-ubin three headmen were found to have falsified tax-tickets and duplicate tax-tickets were found in the possession of a fourth. The matter is under enquiry. In Magwe cases of tampering with tax-tickets are under enquiry and in Yamèthin one headman is under trial for wholesale alterations. In Akyab 71 grazing-grounds have been demarcated permanently. Five encroachments were detected and the offenders were fined Rs. 73 in all. Two who failed to pay the fines were imprisoned for three weeks each. In Kyaukpyu 10 grazing-grounds were demarcated and in Sandoway all. In Pegu final orders have been passed in the case of 18 reserves, and concrete pillars are being supplied for their final demarcation. Seventy prosecutions for encroachment were instituted, 14 convictions were obtained, and 32 cases are still pending. In Tharrawaddy surveyors who were slack in reporting encroachments as soon as detected were warned, and the demarcation of 135 reserves was inspected by the Land Records staff. Demarcation in Prome is defective, but the Subdivisional Officers and Township Officers did not take the matter up. Seventeen encroachments aggregating 106 acres were detected and all the offenders were prosecuted and fined Rs. 95 in all. In Ma-ubin 164 reserves have been dealt with and three excluded from demarcation; the remaining 36 are still being enquired into by the Township Officers. In Pyapôn the appointment of a grazing-ground demarcation staff as in Ma-ubin is under consideration. In Bassein all reserves have been fully demarcated and the area of encroachments fell from 450 acres last year to 175 acres this year. Fifty-four offenders were convicted on prosecution. In Henzada the punishments inflicted last year proved inadequate, and the same persons have been encroaching again this year; fresh demarcation has not yet, however, been commenced. In Myaungmya 228 persons encroached on 1,000 acres of grazing-ground: of these 16 were imprisoned and fines aggregating Rs. 1,343 were inflicted on 91 others. The Land Records staff examined 297 reserves and 91 reserves are being enquired into with a view to re-notification. In Toungoo demarcation has been completed and encroachments are less frequent in consequence. In Thatôn one surveyor falsified his maps to permit of cultivation in a reserve, and another surveyor failed to report an encroachment. In Amherst 12 encroachers were fined sums amounting to Rs. 145. In Tavoy the reserves have all been demarcated, but the Deputy Commissioner complains of the quality of the posts and wants iron pipes or *pyinkado* posts to be sanctioned. In Mergui the Township Officers are taking great interest in the demarcation and inspection of reserves. In Pegu a half-inch map has been prepared, but it is not yet published. In Ma-ubin a new 2-inch map is in preparation. In Pyapôn the 1-inch maps indented for have not yet been received in full and the half-inch map has been sent to the Press. In Bassein the 1-inch maps indented for have not yet been received, and in Myaungmya the half-inch map has been sent to the Press. In Thatôn 1-inch maps are being printed by townships. In Mergui a new district map has been prepared. In Mandalay a 1-inch map, and a 4-inch map of Maymyo have been sent to the Press. In Yamèthin, Meiktila, Lower and Upper Chindwin, and Minbu the supply of various sheets of topographical maps is still awaited. In Pyapôn applicants for certificates of having acquired the status of landholdership are now required to produce documentary evidence to support their claims. Formerly a tedious search and elaborate copies had to be made by the Land Records staff without any remuneration.

Village Headman Scheme.

14. In Pegu two circle thugyis and two in Sandoway have retired on pension. One was removed in Bassein and one in Kyaukpyu. In Pyapôn the appeal of a circle thugyi against dismissal was rejected and the dismissal confirmed. In Henzada one circle thugyi died, one retired, and one was confirmed as Myoôk. In Myaungmya one thugyi was indebted to such an extent that it was not considered safe to trust him to collect revenue. In both Toungoo and Amherst two circles were broken up during the year and two in Thatôn, where also a circle thugyi is under suspension. In Tavoy one thugyi retired and three in Mergui. In each case the circle was brought under the Village Headman Scheme.

Conduct of the Supplementary Survey staff.

15. Many of the Superintendents have earned unqualified praise from Deputy Commissioners. The subordinate staff has on the whole worked well, but in several districts the efforts made to raise the standard of work have not met with conspicuous success. The Akyab District unfortunately lost two Inspectors by death during the year. In Hanthawaddy the Revenue Surveyors failed to cope with the heavy modifications of assessment resulting from floods, and an excessive demand was enforced by coercive processes in consequence. In Pegu the many old hands of the staff are reported to have deteriorated physically and mentally: two of the best Inspectors died, 16 members of the staff are on medical leave for long terms, one was dismissed, one reduced, and one imprisoned. The staff also is considered inadequate. The staff in Tharrawaddy is reported as improving in discipline and attention to duty: two Revenue Surveyors were dismissed, one on conviction under the Penal Code and the other on absconding after the issue of a warrant of arrest, two surveyors were removed, one surveyor is at present answering a criminal charge of fraud in having effected a transfer of land to a chetty on forged signatures. Four of the staff died. The Deputy Commissioner complains that the office is undermanned and underpaid. In Prome one surveyor was removed, and in Ma-ubin one was dismissed, and eight removed. In Pyapôn there was a general falling off in the work of the Revenue Surveyors till five were removed and 20 others punished, causing, it is said, a distinct improvement. An improvement is reported in Bassein also where one Revenue Surveyor and two *potta* surveyors were dismissed, one on a conviction for forgery. In Thatôn the replacement of the worst of the older members of the staff by new men has improved the discipline, but not the morals of the staff, as two of the newly appointed surveyors were concerned in two of the worst cases of corruption. One Inspector will be compelled to retire. In Magwe one surveyor was removed. In Minbu one Inspector was reduced for 18 months. In Mandalay one surveyor was removed and two dismissed. In Katha, as in Mergui, the difficulty of obtaining men makes it necessary to retain men whose services would otherwise not be required. In Shwebo the Inspectors were found to be in many cases unfit for work: one Inspector retired on medical certificate, two were found to be incompetent and permitted to resign; two have been called upon to produce medical certificates of capability to do field work, and one officiating Inspector was reverted to his post as surveyor for incompetence. One surveyor was removed. The surveyors generally are new to their work and a number of incompetents will be weeded out as better men are available: four have already resigned. In Sagaing one surveyor was removed, two in the Lower Chindwin, one in Yamèthin, and two in Myingyan.

Inspection of Field-work. Statement II.

16. The Commissioner of Settlements and Land Records inspected the Supplementary Survey field work in six *kwins* in the Lower Chindwin District; the Deputy Director of Land Records 134 *kwins* in the Kyauksè, Mandalay, Shwebo, Sagaing, Upper Chindwin and Katha Districts; the officiating Deputy Director of Land Records, Captain Ormiston, 69 *kwins* in the Yamèthin, Magwe and Myingyan Districts, and the Assistant Director of Land Records, 126 *kwins* in the Toungoo, Tharrawaddy, Thayetmyo, Prome, Minbu, Amherst, Sandoway, Kyaukpyu, Akyab, Tavoy and Mergui Districts. The number of *kwins* inspected by Deputy Commissioners has risen from 156 to 157. For this result two Deputy Commissioners are principally responsible. Major Macnabb in Mandalay inspected 27 *kwins* and Mr. W. J. Smyth, I.C.S., in Tharrawaddy checked the work in 33 *kwins*. But for these two officers there would have been a great falling off in the number of inspections. The fewest inspections were made in Pyapôn, Thatôn, Thayetmyo, Sandoway (one each), Upper Chindwin, Yamèthin, Myingyan (two each), and no inspections were done in Kyaukpyu, Hanthawaddy, Ma-ubin, Henzada, Toungoo, Amherst, Mergui, Magwe and Katha.

The average number of *kwins* inspected by each Subdivisional Officer has fallen from 10·3 to 9·6, and by each Township Officer from 9·6 to 8·2.

The most inspections were done by Subdivisional Officers Maung Shwe Tha, Thazi (57), and Maung Po Te, Myinmu (46), and by Township Officers Maung

Paw Shan, Ngazun (51), Maung Tha Dun Gyaw, Kyunhla (50), and Maung Po Tun, Thazi (49).

No inspections were done by the Subdivisional Officers of Pyapôn, Kyaiklat, Myaungmya, Amherst, Maliwun, Amarapura, Wuntho and Katha, and by the Township Officers of Minhla, Gyobingauk, Pantanaw, Ma-ubin, Kyaiklat, Dedayè, Yegyi, Kyônpyaw, Bassein, Ngaputaw, Kyangin, Henzada, Myaungmya, Mudôn, Kawkareik, Yebyu, Satthwa, Madaya, Palè, Mônywa, Yamèthin, Pyinmana and Taungtha. The total amount of checking by District Officers shows a serious decrease from last year and is far from sufficient.

The number of *kwins* checked by Superintendents shows a further rise from 2,616 to 2,729 *kwins*. Mr. C. H. O'Hara in Katha heads the list with 215 *kwins*, followed by Mr. Skinner in the Upper Chindwin (170), and Mr. Palmer in Sagaing (160), eight other officers, making eleven in all, as compared with seven last year, checked over 100 *kwins*. Eight officers checked less than 60 *kwins*. Messrs. Körper (50), Desouza (51), Torrens (26), and Stubbs (44), did inspection of resurveys in their respective districts. Mr. O'Donel, Tavoy (55), is considered by the Deputy Commissioner to have done an insufficient number. In the case of Mr. McCann, Mergui (43), in view of the inexperience of both the office and field staff, and the introduction of supplementary survey subsequent to settlement operations, the Deputy Commissioner reports that there appears to be sufficient reason for the decrease of the number of inspections. Ill-health apparently accounts for the fewness of the *kwins* (23) inspected by Mr. Thomas, Thayetmyo.

The average number of *kwins* checked by each Inspector has risen from 103 to 105. The highest averages are in Hanthawaddy (164) and Sagaing (147). The following Inspectors are singled out for commendation by Deputy Commissioners: Maung Kyaw Din (Mônyo), Maung Ni Aung (Pyapôn), and Maung Po Kyin (Kyaiklat).

The number of holdings inspected by District Officers and the Land Records staff was 616,011 and the percentage of error 16·95.

The errors found were—(*a*) in survey, 12,510; (*b*) in fallow marking, 42,389; (*c*) in classification and rates, etc., 1,365, and (*d*) statistical errors, 112,842.

Training of Civil Officers in Survey and Land Records Work.

17. During the year 10 Assistant Commissioners, 5 Extra Assistant Commissioners and 23 Myoôks were put through a course of Surveying and Land Records work in Land Records offices, and all passed the required tests. The usual rule is that officers undergo their training immediately on appointment, but several Deputy Commissioners point out that in the case of Extra Assistant Commissioners and Myoôks this frequently results in the training taking place when the Superintendent of Land Records can least spare time and when the officer under training has least chance of seeing anything of the field work.

Survey Schools. Statement III.

18. There are now 19 Government Survey Schools, or one more than last year. The new school was opened at Mergui on the 15th June 1908. It is required, because local surveyors are no longer readily procurable; candidates from the place not being inclined to go to the school at Moulmein. The total number of pupils on the rolls on the 31st March was 374; of these 33 per cent., chiefly in Upper Burma, paid no fees. In Prome there were, as before, no paying pupils. Exemptions should ordinarily only be granted in accordance with the rules. The average number of students was 368, and the average number of days the schools was in session 267. Attendance decreased in Ma-ubin, Bassein, Sagaing, Insein, Yamèthin and Meiktila, while there were satisfactory increases in Henzada, Mandalay, Moulmein and Prome. In some of the schools of the dry zone the decrease is to some extent attributable to the agricultural depression of the year. The most prosperous schools are those of Moulmein, Minbu, Henzada and Pakôkku, so far as numbers in the year are concerned, and the least prosperous are those of Yamèthin, Ma-ubin, Bassein and Toungoo. There is no good reason why these last named schools should not be well filled; there was a time when Bassein and Ma-ubin were amongst the

best attended schools. The success or otherwise of a school depends in large measure upon the interest taken in its welfare by the Superintendent in charge. The attendance at class was fairly regular everywhere. The educational attainments of the students continues at a fairly high level; only about one-half of the number having been admitted into the schools subject to the prescribed test, and the rest on the strength of their educational certificates. Two hundred and twelve scholarships, 68 of Rs. 10 and 144 of Rs. 5 a month, were allotted to deserving scholars. The cost of these scholarships came to Rs. 14,907. A sum of Rs. 480 was paid in prizes to the various schools and awarded on the results of a local test examination. The proportion of sons of thugyis and agriculturists to those of traders and others was as 3 to 1. From Pegu the school fails to attract many sons and blood relations of thugyis as these men appear to find work in other and more lucrative departments. The demand for qualified surveyors is continuous and generally speaking suitable employment is readily obtainable in the Land Records and Settlement Departments and elsewhere, if candidates are willing to work outside their own districts. In some centres, *e.g.*, Katha and Mergui, surveyors are often not procurable. In all, 124 passed pupils are reported to have obtained permanent or temporary appointments in the year. The total expenditure on schools amounted to Rs. 39,446 against an income of Rs. 5,231; this gives the net cost at Rs. 34,215. The cost of educating each pupil thus works out to Rs. 91, which is about the same as last year. Technical education is always comparatively expensive. The number of candidates from Government Survey Schools who qualified at the Syndicate examination of April last was 209 in Surveying, 92 in Arithmetic, and 229 in Revenue law; this gives a percentage of passes on the number of pupils for examination in each of the subjects at 64, 30 and 76, respectively. The results are highly satisfactory as regards Revenue, in which successes were extremely limited heretofore; they are fairly satisfactory for Surveying and decidedly poor for Arithmetic. The paper in Arithmetic was simple, making the failures more remarkable. The schools of Minbu, Prome, Moulmein, Sagaing, Henzada and Insein did best in Surveying, while the least successful ones were those of Katha, Mandalay and Kyaukpyu. In Arithmetic the Moulmein, Minbu and Henzada schools did pretty well, while Katha, Pegu, Mônywa, Yamèthin and Kyaukpyu did badly. The passes in Revenue law were remarkably good for Moulmein, Minbu, Henzada, Pakôkku, Sagaing and Meiktila, but were poor for Toungoo, Kyaukpyu and Yamèthin. The passes from other than Government schools and of private students are extremely small in Surveying and Arithmetic, though in Revenue they are much better than usual. Of candidates not coming from Survey schools there were 18 who qualified in Surveying, 9 in Arithmetic, and 66 in Revenue; the percentage of passes in the three subjects, respectively, was 33, 11 and 78. A pupil of the Government Survey School, Minbu, obtained the "Clancey" medal for proficiency in Surveying; this is the third occasion on which this school has achieved this distinction.

The schools were visited from time to time by the local Superintendents of Land Records. All the schools but Insein were inspected by the Deputy and Assistant Directors; the Commissioner of Settlements and Land Records was not able to inspect any schools. The condition of the schools at Katha, Yamèthin and Toungoo was unsatisfactory. The schools at Pakôkku, Minbu, Meiktila and Toungoo were twice visited. The mapping done in the schools at Moulmein, Kyaukpyu, Minbu and Bassein was exceptionally good, but in Pegu, Toungoo, Yamèthin and Akyab drawing and printing require to be better taught; draughtmanship is essential for a surveyor. Field-work generally is well practised, though there is often carelessness in taking offsets. On the whole, the schools are in a satisfactory state and well managed, though improvement is looked for in some of them, notably Kyaukpyu, Toungoo, Katha, Mônywa and Yamèthin. The teachers as a class are competent and have worked well, more especially those of Minbu, Moulmein, Sagaing, Pakôkku and Bassein; those whose work is adversely commented on by local officers, belong to Katha, Kyaukpyu and Toungoo. The conduct of the teachers of Katha and Kyaukpyu is under investigation. The teachers of Moulmein and Prome were appointed to Myoôkships.

Supplementary Survey in Towns. Statement V.

19. Supplementary Survey of towns has been carried on in the year in 19 districts. In some cases the survey of extensions and changes in the maps have alone been done; in others the prescribed registers of the draft 'Directions for Supplementary Survey in Towns' have been drawn up in manuscript. Tenure recording and entering up of the rolls move slowly, and the appointment of special officers in some cases, as described in paragraph 5, appears to be very desirable. Under recent orders the town and district supplementary survey staffs are to be amalgamated. In the smaller towns the part-time surveyor will look after agricultural *kwins* in addition to his town work. Particulars of the supplementary survey work undertaken in the year are given in Statement No. V. There are now 64 towns under supplementary survey, with a total area of 129·58 square miles, of which 54,144 acres are under occupation. Eleven thousand five hundred and one permanent survey marks have been laid down, and most of these have to be protected by the regulation masonry pillars. The establishment employed consists of 4 Inspectors, 54 surveyors and 4 draughtsmen. The cost of the operations amounted to Rs. 44,013 in the year of report. This however includes the cost of the large staffs engaged on survey and assessment work in the towns of Rangoon, Mandalay and Bassein, paid wholly by the Municipalities, and also the cost of establishments in Maymyo town and Mandalay Cantonments where the surveyors, besides town work, maintain maps and registers of agricultural lands. For ordinary town survey work half the cost is to be met from Provincial Funds and the other half from Municipal, Town Committee, or District Funds. Superintendents inspected the work of 47 towns and Inspectors that of 24 towns. Where there are no special Inspectors the inspections have been performed by the local Land Records Inspectors. With but few exceptions the surveys are on the scale of 64 inches to the mile; but the central areas of Rangoon and Mandalay have been done on a larger scale, while the scale of suburban areas is sometimes smaller. The maps and registers have on the whole been carefully prepared, though defects have been noticed in places.

As already mentioned, Supplementary Survey is being carried on in the towns of 19 districts. In some districts all the surveyed towns of which the rolls have been completed, are under supplementary survey. In other districts supplementary survey has not started in all the towns where the roll is complete. In Rangoon Town the staff has prepared the land revenue and rent rolls. An Inspector and 4 surveyors were added to the establishment owing to the increased duties and backwardness of survey, and it may be necessary to still further strengthen the staff. The Superintendent and Inspector, in addition to ordinary work, attend to cases connected with reclamation, land acquisition, and boundary demarcation. The Town Lands office of Mandalay is not in a satisfactory working order. Recommendations for a complete change of system will shortly be prepared. In Bassein town the staff attended to the survey and assessment of lands and the preparation of the land revenue and rent rolls. In Pegu town the Municipal land tax rolls were prepared for the first time under the supervision of the Superintendent of Land Records. In Danubyu town of the Ma-ubin District a number of grants were cancelled and fresh grants issued which has delayed the preparation of the town lands rolls. In Pyapôn the town lands assessment rolls were prepared as hitherto by the Township officers, but hereafter this duty will devolve upon the town surveyor. In Mandalay several encroachments are recorded, and in many of these cases prosecutions have been instituted. On the whole, there is reason for considering that the up-keep of maps and registers and the preparation of the town lands rolls, in all districts in which such work is carried on, have been as well managed as circumstances permitted.

Miscellaneous.

20. The Annual Trans-frontier Trade Report, the Season and Crop Report, and the Note on Rainfall Registration issued as usual. Forecasts of the rice and cotton crops were also published. The rapidly growing importance of the groundnut crop calls for a forecast in the interests of the mercantile community, and sanction for its issue has been obtained. The Land Records Manual, which was circulated for criticism last year, has been further revised and should shortly be ready for publication.

Detailed instructions for the preparation of the Annual Famine Programmes were introduced into the Famine Code. There was again considerable delay in getting in the District Programmes, but it is hoped that this delay will not occur in future now that the instructions are better understood. The officiating Commissioner of Settlements and Land Records visited several districts in the dry zone threatened with scarcity. The reports prescribed by the Famine Code were submitted and showed that there was nothing in any of these districts approaching scarcity conditions such as would justify the opening of test works under the conditions of the Code.

Proposals have been made for relieving the Commissioner of Settlements and Land Records of certain miscellaneous subjects with which he now deals. Orders are awaited regarding the proposed transfer of "Agricultural Advances" to the Director of Agriculture. Other subjects suggested for transfer are Famine, Rainfall Registration, Crop Forecasts, and Weekly Crop Reports.

The instructions for the survey of Fisheries and Towns to which reference was made in last year's report have been embodied in the Survey Manual.

Effect has been given to the instructions for the training of apprentice surveyors in practical surveying and Land Records work. The apprentices (passed survey school students) are attached to Inspectors for training and have to appear at annual examinations. In making appointments to the ranks of surveyors preference is given to those who obtain a qualifying certificate at this examination, while apprentices who fail to qualify within two years are removed from the list of apprentices and are shown as certificated men not fully qualified.

Under the orders relating to the annual nomination of subordinate Land Records officers for Myoôkships, Maung Sein Yan, Survey School Teacher of Moulmein was appointed to the Subordinate Civil Service.

The reorganization scheme of the superior branch of the Land Records service was sanctioned with effect from the 1st April 1908. Under this scheme the pay and prospects of the Superintendents have been greatly improved.

The draft rules, referred to in last year's report, for the selection and training of Assistant Superintendents, were revised and have been sanctioned since the close of the year. Under these rules Assistant Superintendents have to undergo two and a half years course of Survey and Land Records training. It is also proposed to put all junior Superintendents now in the Department through the survey portion of this course lasting two years. Arrangements are being made to appoint Probationer Assistant Superintendents and put them through the prescribed course of training. The survey training of the junior Superintendents is however a difficulty. It is desirable to send up several of these officers for the survey course every year, but there are no officers to relieve them. Suggestions have been made and are now before Government for placing selected Land Records Inspectors in charge of some of the smaller charges, such as Thayetmyo, Sandoway, Mergui and the Upper Chindwin, until the Probationer Assistants now appointed become available for regular work. The proposal sent up from this office is that the Inspectors should be appointed as Myoôks and should be given an allowance while in charge.

Proposals for the reorganization of the Subordinate Land Records Service were under preparation during the year of report and are approaching completion. Reports of Deputy Commissioners and inspections by the Commissioner of Settlements and Land Records and his Assistants show clearly that in many districts the surveying staff is not sufficiently strong for the work to be done. Again the pay of the surveyors is not sufficiently attractive, although the fact that service is now pensionable is a great boon. The reorganization scheme which it is hoped to submit shortly, provides for a stronger field staff where required and gives some clerical assistance in the Superintendents' offices. Besides this, it contains proposals for raising the initial pay of surveyors to Rs. 30 in districts where it is less than this figure. The grant of an office allowance mentioned in paragraph 10 of this report is also included. It is suggested that the pay of Inspectors and Survey School teachers should be somewhat improved, and various other suggestions are made.

Supplementary survey in places where extensions of cultivation are great has been the subject of much discussion. It has been admitted that in rapidly changing

areas the regular staff cannot cope with the extensions and changes. The practice has been to let details slide and to restrict work to the survey and plotting of such boundaries as are essential for assessment purposes. Where the areas dealt with in this way become extensive, and where Revision Settlement is approaching, large special survey parties have been entertained to revise the original survey. All details are surveyed and plotted by these special parties, and in this way the *kwin* maps again become correct charts of the holdings within their limits. In 1906, the Financial Commissioner pointed out that this system of working was not in accordance with the Directions. These contemplate a gradual survey of all changes so that the map is at all times a complete picture of the *kwin*. Mr. Bayne suggested the abandonment of the system under which the survey is allowed to drift into arrears for long intervals and is then suddenly brought up to date by the efforts of a large party temporarily entertained for the purpose. He recommended instead the employment of a small permanent increase to the district establishment for keeping up surveys in areas beyond the powers of the regular staff. This was approved by the Local Government and the employment of a special officer was sanctioned to determine the areas for maintenance by the regular staff and the strength of the extra staff required for the remaining areas. Mr. R. A. Gibson, Superintendent of Land Records, who for several years had been employed as a Settlement officer, was selected for this duty, and he started operations in January 1908. The districts selected for enquiry are Hanthawaddy, Pegu, Henzada, Myaungmya, Ma-ubin, Pyapôn, Toungoo, Thatôn and Amherst. Mr. Gibson commenced in Toungoo and completed his enquiry there and in Henzada and Pegu. He has submitted his three reports which are now before the Financial Commissioner.

Services of Officers.

21. With a few exceptions, Superintendents of Land Records have received the praise of their Deputy Commissioners, and inspections by the Commissioner of Settlements and Land Records and his Assistants have ordinarily confirmed those good opinions. With increased rural areas under assessment, and with town surveys and other special duties to look after, the duties of Land Records Superintendents have grown heavier in recent years. It is gratifying to find that these duties are so well performed.

Of the senior officers Messrs. Beechey, Haddock and Palmer deserve special mention for their good work, while Maung Kyi O, and Messrs. Nolan, Carrapiett, and L'Estrange amongst the juniors did exceptionally well.

Captian T. L. Ormiston, I.A., acted as Deputy Director for eight months when he was relieved by Mr. W. E. Lowry, I.C.S., who returned from leave. Both these officers did excellent inspection work and Mr. Lowry was also much occupied with the Land Records Manual. Mr. J. C. Clancey, Assistant Director, did a full season of field inspection and also found time to do a great deal in office.

H. M. S. MATHEWS,

Offg. Commr. of Settlmts. and Land Records, Burma.

RANGOON, 31*st August* 1908.

APPENDICES.

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STATEMENT No. I.—*Area under, and cost of, Supple mentary*

District.	Total area.				Total assessment (including cess in Lower Burma) on the area in column 5.
	Total in	Under occupation.	Under cultivation.	Under assessment.	
1	2	3	4	5	6
	Sq. Miles.	Acres.	Acres.	Acres.	Rs.
Akyab	1,956	643,416	564,371	538,801	17,73,373
Kyaukpyu	782	157,294	150,543	153,162	2,73,652
Sandoway	268	54,449	52,478	54,008	1,00,678
Hanthawaddy	2,621	1,212,997	1,141,974	1,212,748	40,23,806
Pegu	2,382	886,533	847,769	886,320	23,07,490
Tharrawaddy	1,203	474,466	444,691	474,386	12,35,854
Prome	1,724	353,439	328,106	353,056	6,03,471
Ma-ubin	1,648	437,417	398,625	435,323	13,63,141
Pyapôn	1,165	576,319	550,602	574,138	18,06,687
Bassein	2,223	664,489	592,306	661,582	15,98,212
Henzada	1,809	545,063	514,139	544,295	14,46,863
Myaungmya	1,827	616,067	552,506	613,078	18,75,370
Toungoo	1,496	387,378	359,133	362,473	8,29,931
Thatôn	2,216	663,723	625,974	655,221	12,57,360
Amherst	1,298	390,233	364,838	383,464	7,81,983
Tavoy	469	120,233	112,436	117,832	3,12,520
Mergui	590	90,077	81,766	88,316	2,64,823
Thayetmyo	577	97,299	68,308	97,027	1,18,732
Minbu	1,418	425,280	204,925	162,672	3,41,562
Magwe	2,915	935,089	437,268	381,969	4,43,902
Mandalay	700	243,108	174,512	153,905	7,11,552
Katha	1,080	189,546	158,327	147,346	1,53,888
Shwebo	3,680	1,181,717	479,346	205,384	5,60,538
Sagaing	1,826	725,060	443,189	214,900	2,59,275
Lower Chindwin	2,572	742,750	464,780	315,635	2,17,952
Upper Chindwin	103	37,427	26,908	25,378	30,947
Kyauksè	567	251,154	168,681	144,577	7,58,335
Meiktila	1,620	628,566	349,571	202,117	1,90,066
Yamèthin	1,776	448,801	299,705	183,354	3,53,814
Myingyan	3,030	1,171,551	638,656	364,720	2,24,798
Total for 1907-08 ...	47,541	15,350,941	11,596,433	10,707,187	2,62,20,575
Total for 1906-07 ...	47,470	15,051,365	11,667,389	10,987,827	2,54,81,253

* Includes one *Thugyi*

Survey for the year 1907-08 (Paragraph 8).

Number of Inspectors.	Number of Surveyors.	Total Cost.							Remarks.
		Per square mile (column 2).			Per acre of the area in column 3.	Per cent. of the assessment in column 6.	Of superintendence and inspection.	Of the Survey Staff.	
		Of superintendence and inspection.	Of Survey Staff.	Of combined total.					
7	8	9	10	11	12	13	14	15	16
		Rs.	Rs.	Rs.	Ans.	Rs.	Rs.	Rs.	
7	88	7·56	21·09	28·65	1·394	3·16	14,783	41,259	
4	33	16·32	14·32	30·64	2·438	8·76	12,765	11,198	
3	13	39·37	19·90	59·27	4·668	15·78	10,552	5,332	
9	111	10·64	23·67	34·31	1·186	2·24	27,900	62,040	
9	75	9·88	16·93	26·81	1·152	2·77	23,536	40,321	
5	49	11·97	21·75	33·72	1·308	3·28	14,398	26,171	
5	54	9·16	16·39	25·55	1·994	7·30	15,790	28,252	
5	51	8·46	16·34	24·80	1·495	3·00	13,940	26,928	
6	62	13·79	28·56	42·35	1·370	2·73	16,062	33,269	
8	72	7·87	16·55	24·42	1·307	3·40	17,500	36,799	
6	64	7·47	19·63	27·10	1·439	3·39	13,510	35,512	
6	58	8·48	21·90	30·38	1·442	2·96	15,491	40,018	
5	41	9·06	13·31	22·37	1·383	4·03	13,557	19,916	
6	73	7·26	17·59	24·85	1·327	4·38	16,085	38,983	
5	44	10·14	17·10	27·24	1·450	4·52	13,162	22,195	
3	*24	17·68	23·20	40·88	2·551	6·13	8,293	10,880	
3	20	15·23	16·62	31·85	3·338	7·10	8,988	9,804	
2	20	12·27	16·30	28·57	2·710	13·88	7,079	9,403	
5	45	9·11	12·67	21·78	1·162	9·04	12,914	17,969	
8	75	6·49	9·87	16·36	0·816	10·74	18,916	28,766	
5	50	24·21	31·65	55·86	2·574	5·50	16,946	22,157	
5	38	12·14	18·04	30·18	2·751	21·18	13,107	19,484	
10	100	5 82	10·81	16·63	·829	10·92	21,430	39,775	
8	69	11·90	16·46	28·36	1·143	19·97	21,724	30,059	
6	56	5·94	8·93	14·87	·824	17·54	15,280	22,959	
1	8	69 01	35·60	104·61	4·606	34·82	7,108	3,667	
6	45	22·38	33·31	55·69	2·011	4·16	12,688	18,885	
5	54	9·68	13·54	23·22	·958	19·79	15,683	21,937	
5	52	11·68	11·28	22·96	1·454	11.53	20,739	20,039	
8	74	5·57	9 06	14·63	0·605	19·71	16,880	27,437	
169	1,618	9·61	16·23	25·84	1·280	4·68	4,56,806	7,71,414	
166	1,597	9·36	15·35	24·71	1·247	4·60	4,44,146	7,28,506	

who is a Surveyor.

STATEMENT NO. II.—*Supplementary Survey*

District.	Total number of *kwins* in tract.	NUMBER OF *KWINS* IN WHICH BY LAND RECORDS STAFF.				
		Superintendent.	*Inspectors.*			Total.
			Number of Inspectors.	Number of *kwins* checked.	Average.	
1	2	3	4	5	6	7
Akyab	1,131	50	*7	509	73	532
Kyaukpyu	732	83	4	292	73	375
Sandoway	291	83	3	204	68	222
Hanthawaddy	2,831	26	9	1,475	164	1,501
Pegu	1,333	85	9	699	78	738
Tharrawaddy	565	54	5	517	103	517
Prome	1,026	92	5	708	142	778
Ma-ubin	593	105	5	436	87	541
Pyapôn	724	67	6	488	81	509
Bassein	1,285	103	8	633	79	689
Henzada	849	125	6	621	104	702
Myaungmya	1,067	82	6	644	107	674
Toungoo	768	84	5	452	90	479
Thatôn	1,423	73	6	514	86	534
Amherst	864	51	5	437	87	488
Tavoy	517	55	3	312	104	321
Mergui	642	43	3	178	59	207
Thayetmyo	377	23	2	223	112	215
Minbu	846	44	5	643	129	677
Magwe	2,264	95	8	1,069	134	1,069
Mandalay	743	117	5	689	138	525
Katha	1,937	215	5	453	91	668
Shwebo	3,639	124	10	851	85	915
Sagaing	1,169	160	8	1,174	147	1,187
Lower Chindwin	1,606	135	6	651	109	786
Upper Chindwin	188	170	1	131	131	180
Kyauksè	639	75	6	539	90	614
Meiktila	1,994	78	5	681	136	759
Yamèthin	1,886	107	5	527	105	541
Myingyan	2,832	125	8	1,032	129	1,157
Total for 1907-08 ...	36,761	2,729	169	17,782	105	19,100
Total for 1906-07 ...	34,065	2,616	163	16,860	103	18,091

* Includes two appointed

Inspections for the year 1907-08 (Paragraph 16).

THE FIELD WORK WAS TESTED.

Difference in revenue due to corrections.		By District Officers.								Remarks.
		Deputy Commissioner.	*Subdivisional Officers.*			*Township Officers.*			Total.	
Total increase.	Total decrease.		Number of Subdivisional Officers.	Number of *kwins* checked.	Average.	Number of Township Officers.	Number of *kwins* checked.	Average.		
8	9	10	11	12	13	14	15	16	17	18
Rs.	Rs.									
768	59	7	4	41	10	9	72	8	120	
783	54	...	1	25	25	6	67	11	92	
55	1	1	...	...	...	3	56	19	57	
268	...	...	3	14	5	7	57	8	71	
1,291	270	10	3	52	17	6	31	5	83	
251	93	33	2	44	22	6	70	12	128	
117	14	4	3	32	11	7	17	2	51	
1,077	373	...	2	10	5	4	15	4	25	
954	240	1	2	...	...	2	14	7	15	
1,252	256	6	2	14	7	6	6	1	26	
1,463	298	...	2	37	19	6	34	6	71	
1,404	173	7	2	2	1	4	8	2	17	
183	52	...	3	10	3	7	67	10	75	
275	23	1	3	20	7	6	40	7	60	
380	72	...	3	19	6	7	43	6	62	
98	...	7	...	...	...	4	31	8	38	
249	...	...	2	8	4	4	27	7	35	
128	261	1	2	9	5	4	15	4	25	
202	147	5	2	14	7	5	32	6	51	
266	157	...	2	5	3	6	44	7	49	
3,635	3,027	27	2	35	18	4	27	7	89	
172	469	...	3	6	2	7	22	3	28	
908	1,333	11	3	44	15	9	180	20	221	
247	191	14	2	67	34	6	117	20	198	
180	288	7	2	10	5	5	2	...	18	
56	52	2	1	14	14	1	29	29	45	
505	139	3	2	6	3	3	16	5	25	
115	463	6	4	63	16	6	82	14	151	
584	436	2	2	23	12	5	61	12	86	
578	317	2	2	10	5	6	43	7	55	
18,444	9,258	157	66	634	10	161	1,325	8	2,067	
18,650	8,319	156	66	682	10	160	1,534	10	2,351	

in March 1908.

STATEMENT NO. III.—*Statistics relating to Government*

Station in which school is established.	Average number of pupils on the rolls in each month.	Number of days the school was in session.	Average number of days each pupil received tuition.	NUMBER OF PUPILS ON THE ROLLS ON THE 31ST MARCH.			Total income.
				Pupils paying fees.	Free pupils.	Total.	
1	2	3	4	5	6	7	8
							Rs.
Akyab	20	255	218	22	..	22	246
Kyaukpyu	24	260	227	22	...	22	299
Insein	18	274	260	22	...	22	432
Pegu	21	273	227	17	1	18	566
Prome	19	281	260	...	21	21	...
Ma-ubin	17	272	233	12	1	13	427
Bassein	13	250	213	13	1	14	388
Henzada	26	263	228	27	...	27	596
Toungoo	13	263	204	15	...	15	370
Moulmein	31	252	245	31	1	32	829
Mergui	...	...	...	...	...	...	...
Pakôkku	25	280	265	...	25	25	2
Minbu	29	270	264	19	12	31	253
Mandalay	20	272	271	17	7	24	224
Katha	21	274	241	13	7	20	188
Sagaing	19	259	238	4	16	20	122
Mônywa	20	261	244	5	12	17	110
Meiktila	21	278	240	...	20	20	59
Yamèthin	11	263	240	10	1	11	120
Total for 1907-08 ...	368	267	239	249	125	374	5,231
Total for 1906-07 ...	389	264	232	270	123	393	5,561

Survey Schools for the year 1907-08 (Paragraph 18).

Expenditure.					Number of pupils who passed the last examination in			Remarks.
On establishment.	On scholarships.	On prizes.	On contingencies.	Total.	Surveying.	Arithmetic.	Revenue Law.	
9	10	11	12	13	14	15	16	17
Rs.	Rs.	Rs.	Rs.	Rs.				
1,104	494	28	433	2,059	11	4	8	
1,140	681	30	271	2,122	4	2	2	
822	509	28	315	1,674	16	5	11	
1,210	960	24	153	2,347	11	...	7	
1,104	894	24	314	2,336	20	7	14	
1,014	850	20	273	2,157	11	4	12	
1,226	936	18	514	2,694	12	5	10	
1,044	528	36	17	1,625	17	9	25	
1,140	462	18	132	1,752	9	4	2	
904	1,707	38	616	3,265	19	16	28	
...	...	...	...	...	...	...	...	Opened 15th June.
1,224	930	30	157	2,341	13	7	17	
1,104	1,171	40	287	2,602	20	9	26	
892	636	32	179	1,739	3	4	13	
1,104	896	24	149	2,173	3	...	10	
1,164	731	24	232	2,151	17	5	16	
1,104	594	26	218	1,942	6	1	8	
1,133	1,351	26	148	2,658	11	8	16	
1,064	577	14	154	1,809	6	2	4	
19,497	14,907	480	4,562	39,446	209	92	229	
20,199	14,813	480	4,970	40,462	277	131	190	

STATEMENT No. IV.—*Area under, and cost of, Demarcation*

District.	DEMARCATION.					SUR			
						TRAVERSE (FIELD).			
	Demarcation officers.	Period.	Towns.	Area.	Cost.	Sub-Surveyors.	Period.	Towns.	Area.
1	2	3	4	5	6	7	8	9	10
		Ms.		Sq. mls.	Rs.		Ms		Sq. mls.
Akyab	...	...	...	...	...	...	...	..	...
Kyaukpyu	...	...	...	...	..	...	...	...	...
Sandoway	1	2	1	0·50	247*	...	...	...	...
Rangoon Town	...	...	...	...	...	...	...	...	...
Hanthawaddy	3	4	9	5·99	2,913*	2	6	10	6·07
Pegu	...	...	...	...	...	...	...	...	...
Tharrawaddy	...	...	...	...	...	...	...	...	...
Prome	1	3	1	7·48	507	1	3	1	7·48
Ma-ubin	...	...	...	...	...	...	...	...	...
Pyapôn	...	...	...	...	...	...	...	...	...
Bassein	...	...	...	...	...	...	...	...	...
Henzada	...	...	...	...	...	...	...	...	...
Myaungmya	...	...	...	...	...	...	...	...	...
Toungoo	3	6	10	8·81	822*	2	6	9	9·56
Thatôn	1	4	3	2·67	770	2	3	3	2·67
Amherst	1	3	2	0·60	444*	1	2	1	1·09
Tavoy	...	...	...	...	...	...	...	...	...
Mergui	...	...	...	...	...	...	...	.	...
Thayetmyo	1	6	2	2·07	905*	2	4	2	4·73
Pakôkku	1	7	1	3·60	1,344*	2	1	1	3·60
Minbu	...	...	...	...	...	...	...	...	...
Magwe	1	...	1	1·00	96*	...	...	..	...
Mandalay	...	...	...	...	...	...	...	...	...
Katha	...	...	...	..	...	...	...	...	...
Shwebo	...	...	...	...	...	...	...	...	...
Sagaing	...	...	...	...	...	...	...	...	...
Lower Chindwin	...	...	...	...	...	1	2	2	1·40
Upper Chindwin	...	...	1	0·17	...	...	...	...	...
Kyauksè	...	...	...	...	...	...	...	..	...
Meiktila	...	...	...	...	...	...	...	...	...
Yamèthin	...	...	...	...	...	...	...	...	...
Myingyan	...	...	...	...	...	...	...	...	...
Total for 1907-08	13	2—7	31	32·89	8,048	13	1—6	29	36·60
Total for 1906-07	17	2—9	41	58·25	16,351	13	1—7	31	48·66

and Survey of Town Lands in 1907-08 (Paragraph 5).

VEY.

Cadastral (field).						Recess.		Cost (field and recess).	Remarks.
Inspectors.	Field Surveyors.	Draughtsmen and Computors.	Period.	Towns.	Area.	Inspectors, Draughtsmen, and Computors.	Period.		
11	12	13	14	15	16	17	18	19	20
			Ms.		Sq. mls.		Ms.	Rs.	
...	...	...	...	...	...	...	...	...	Operations under Boundaries Act to be yet undertaken. Survey and preparation of rolls nearly complete.
...	...	...	...	...	...	...	...	...	Survey of one town completed before and of four other towns proposed.
...	2	...	2	1	0·50	...	...	436	* Excludes Rs. 119 cost of demarcation pipes. Traverse done last season; demarcation and detail survey done this year.
..	...	...	...	...	...	...	...	...	Demarcation of Bahan area done last year but survey in abeyance.
2	8	2	6	10	6·07	15	6	12,936	* Excludes Rs. 5,403 cost of demarcation clay pipes and Rs. 1,400 cost of demarcation iron pillars. Survey completed, demarcation done but to be revised. Rolls in hand.
...	...	...	..	...	...	...	...	...	Survey of one town proposed; of 18 towns done in previous years.
...	...	...	...	...	...	...	...	2,283	Burnt out areas of two towns resurveyed by permanent staff.
1	8	1	6	1	7·48	12	6	6,128	Preparation of Town rolls has not yet been done. Tenure enquiry completed of one town and of another in hand.
...	...	...	...	...	...	...	...	...	Surveys completed in previous seasons. Tenure enquiry proceeding. Rolls of one town completed.
...	...	...	...	...	...	...	...	...	Surveys previously completed. Tenure work finished. Rolls of one town done and others being proceeded with.
...	...	...	...	...	...	...	...	...	Survey of one town previously done.
...	...	...	.	...	...	...	...	...	Surveys previously done. Rolls of nine towns completed last year; of one town in hand.
...	..	...	...	...	...	...	...	...	Surveys previously done. Preparation of rolls of three towns done and of three towns in progress.
2	8	1	6	9	9·92	10	6	10,435	* Excludes Rs. 1,507 cost of demarcation pipes and pillars. Rolls not yet commenced.
1	8	3	3	3	2·67	6	1	3,664	Town Land Rolls in preparation.
...	1	...	2	1	1·09	4	...	1,392	Has reference to Amherst Town only. Portion of traversing completed in Moulmein town will require to be re-done. * Excludes Rs. 400 cost of demarcation pipes.
...	...	...	...	...	...	...	...	...	One town previously surveyed.
...	...	...	..	...	...	...	...	...	Completion of maps and area work of one town done by local staff.
1	3	...	6	2	2·07	5	...	3,381	* Excludes Rs. 1,386 cost of demarcation pipes.
...	2	8	1	1	3·60	...	...	210	Survey of one town revised. * Excludes Rs. 1,200 cost of demarcation pipes.
...	...	...	...	...	...	...	...	...	Town Land Rolls now completed.
1	1	...	4	1	1·00	...	...	312	* Excludes Rs. 672 cost of demarcation pipes.
...	...	...	...	...	...	...	...	...	Two towns surveyed in the previous year.
...	...	...	...	...	...	...	...	...	Two towns previously surveyed.
...	...	...	...	...	...	...	...	...	Three towns surveyed before; three other towns now proposed for survey.
...	...	...	...	...	...	...	...	...	Sixteen towns previously surveyed by plane-table.
...	...	...	...	...	...	...	...	...	Three towns previously surveyed. Town Land Rolls of two towns done before and of one just finished.
...	3	2	3	2	1·40	...	...	989	
...	1	...	1	1	0·27	...	...	68	Survey done by plane-table only.
...	...	...	...	...	...	...	...	...	Proposed to resurvey five towns professionally.
...	...	...	...	...	...	...	...	...	A new survey of four towns on professional lines contemplated.
...	...	...	...	.	...	...	...	...	A professional survey of four towns intended.
..	...	...	...	...	...	...	...	...	Survey of two towns completed last year and preparation of town land rolls now finished.
8	45	17	1-6	32	36·07	52	1-6	42,234	
6	47	20	2-7	42	50·92	36	2-6	34,431	

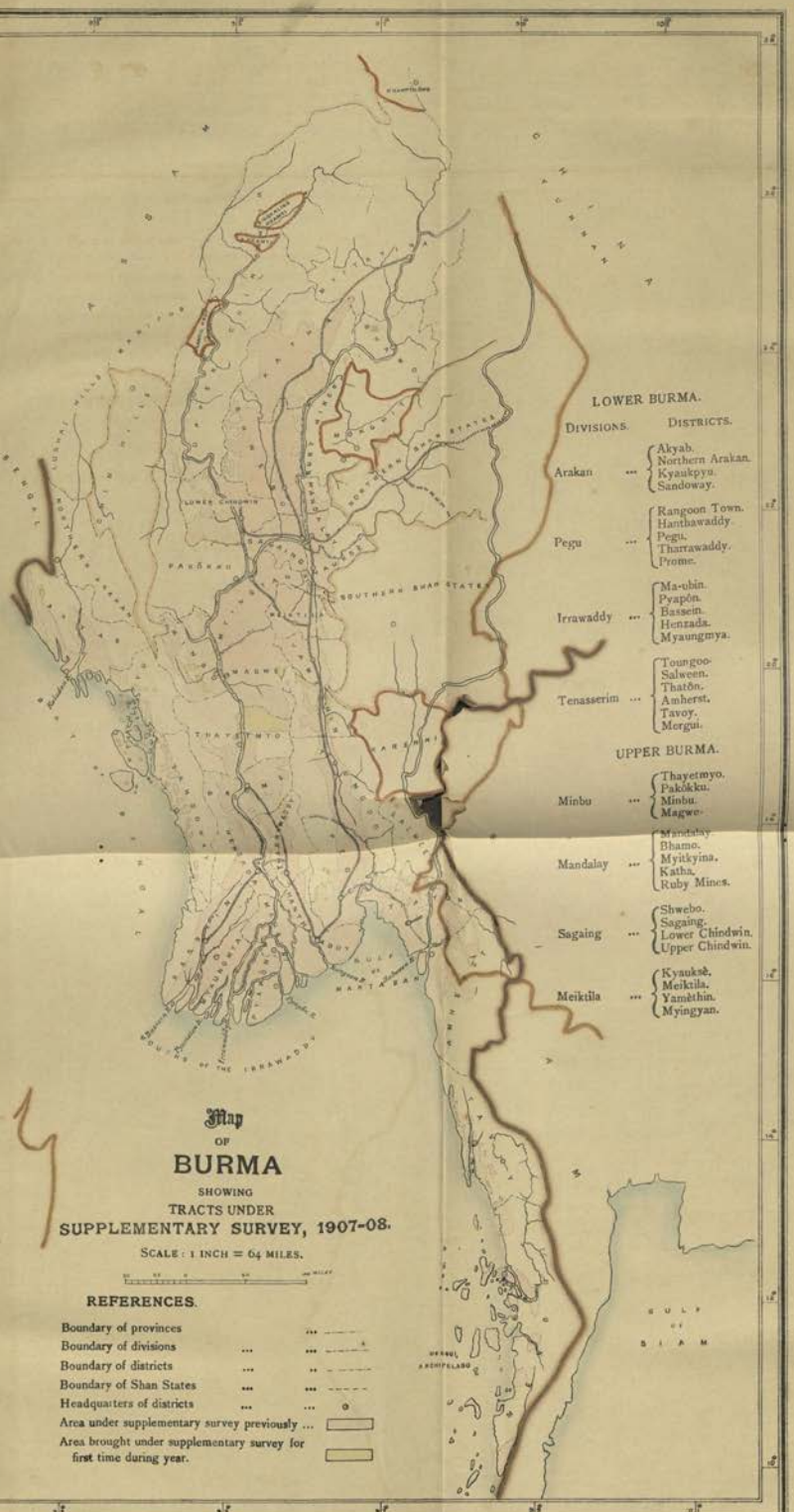
STATEMENT NO. V.—*Area under, and cost of, Supplementary*

District.	Towns.	Scale.	Total area.	Occupied area.	Permanent survey marks.
1	2	3	4	5	6
			Sq. miles.	Acres.	
Akyab	1	64″	5·75	3,548	104
Kyaukpyu	1	64″	1·22	444	52
Sandoway	...	64″	...	...	...
Rangoon Town	1	50′ 100′ 64″	28·00	12,947	1,073
Hanthawaddy	...	64″	...	...	...
Pegu	...	64″	...	...	...
Tharrawaddy	...	64″	...	...	...
Prome	1	64″ 16″	7·48	4,848	548
Ma-ubin	...	64″	...	...	...
Pyapôn	3	64″	7·63	3,361	413
Bassein	1	64″	11·64	3,989	98
Henzada	10	64″	16·50	7,515	1,659
Myaungmya	6	64″	3·96	1,955	402
Toungoo	1	64″	2·32	443	728
Thatôn	3	64″	3·08	904	365
Amherst	...	64″	...	...	...
Tavoy	1	64″	4·47	1,535	180
Mergui	2	33′ 64″ 16″	2·31	1,007	190
Thayetmyo	...	64″	...	...	...
Pakôkku	...	64″	...	...	...
Minbu	4	64″	3·29	710	285
Magwe	2	64″	2·82	659	84
Mandalay	2	64″ 16′ 40′	15·78	6,792	5
Katha	3	64″	1·47	521	130
Shwebo	16	64″	4·31	993	120
Sagaing	2	64″	2·77	929	65
Lower Chindwin	...	64″	...	...	...
Upper Chindwin	...	64″	...	...	...
Kyauksè	...	64″	...	...	...
Meiktila	4	32″ 80′ 40′ 16″	4·78	1,044	5,000
Yamèthin	...	64″	...	...	...
Myingyan	...	64″	...	...	...
Total for 1907-08 ...	64	...	129·58	54,144	11,501
Total for 1906-07 ...	17	...	8·99	2,102	433

G. B. C. P. O.—No. 124, C. of S. & L. R., 1 (a), 11-11-1908—277—J. F.

Survey in Towns in 1907-08 (Paragraph 19).

Staff.			Cost.	Inspections		Remarks.
Inspectors.	Surveyors.	Draughtsmen and Computors.		By Superintendent.	By Inspectors.	
7	8	9	10	11	12	13
			Rs.			
...	1	...	624	1	1	Supplementary survey carried on in the year.
...	1	...	138	1	...	
...	...	...	...	...	...	Survey just completed. Supplementary survey not yet begun.
1	7	2	9,190	1	1	Supplementary survey in operation.
...	...	...	...	...	...	Town land rolls not yet complete and, supplementary survey not yet begun.
...	...	...	...	...	...	Surveys completed in 1904-1906, but town lands rolls not yet ready; special officers engaged on work. Supplementary survey consequently in abeyance.
...	3	...	...	...	..	Supplementary survey not yet begun.
...	1	...	624	...	1	Supplementary survey of one town in progress and of remaining six towns not yet begun.
...	...	...	..	..		Supplementary survey not yet commenced.
...	2	...	1,040	2	1	Supplementary survey of one town not yet begun.
1	5	...	4,245	1	1	Supplementary survey in progress.
...	4	...	3,312	8	10	
...	2	...	1,059	...	...	Survey of extensions and changes attended to.
...	2		1,896	1	1	In nine other towns supplementary survey not yet commenced, as survey only recently completed.
..	1	...	766	2	3	In three other towns survey only just completed and supplementary survey thus not yet introduced in them.
...	...	..	...	...	...	Supplementary survey of one surveyed town not yet started owing to town lands rolls not being yet ready. Tenure work of two towns in hand.
...	2	...	1,120	1	1	
...	1	...	744*	1	1	* Rupees 700 of this cost was borne by the Municipality.
..	...	...	...	...	...	Survey just completed; supplementary survey not yet commenced.
...	...	..	...		...	Survey of one town just revised; supplementary survey not yet undertaken.
...	2	...	1,719	...	...	Supplementary survey started on 1st January.
...	1	...	625	1	...	Changes on maps attended to.
2	15	2	13,303	2	1	Block areas mapped on larger scale and the residential or agricultural areas on the smaller scale.
...	1	...	983	3	...	
..	1	...	918	16	...	The district surveyor helps in the work of up-keep of the maps and rolls.
...	1	...	572	2	2	Survey of one other town done last year, but supplementary survey not yet begun as town lands rolls only just finished.
...	...	...	...	..	...	Survey of two towns only just finished and supplementary survey thus not yet begun.
...	...	...	..	...	...	Three towns previously surveyed and one during the year, but supplementary survey not yet started.
...	...	...	...	...	...	Proposed to re-survey five towns professionally.
...	1	..	1,135	4	...	Demarcation done and professional survey of all four towns intended.
...	...	...	...	...	...	Proposed to re-survey four towns on professional lines.
...	...	...	...	...	...	Preparation of town lands rolls just finished; supplementary survey not yet begun.
4	54	4	44,013	47	24	
...	8	...	5,436	11	8	



S. D. C. P. O.—No. 115, C. of S.—E. L. R.—4-5-08—350.—LITHO.

LAND RECORDS ADMINISTRATION REPORT

FOR

THE YEAR ENDING 30TH JUNE 1909

RANGOON
OFFICE OF THE SUPERINTENDENT, GOVERNMENT PRINTING, BURMA
1909

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LAND RECORDS ADMINISTRATION REPORT

FOR THE YEAR ENDING 30th JUNE 1909.

CHAPTER I.

INTRODUCTORY.

1. *Work of the year.*—During the year of report Supplementary Survey was carried on in 31 districts excluding the Rangoon Town District. Pakôkku appears for the first time in the list given in Statement I but at present Supplementary Survey operations in Pakôkku are confined to a comparatively small island area. The only districts in which regular Supplementary Survey has not yet been introduced are Northern Arakan, Salween, Bhamo, Myitkyina and the Ruby Mines. Supplementary Survey operations in 1908-09 covered 12,269,909 acres of area under cultivation. In the Season and Crop Report the cultivated area of the Province is given at 13,527,647 acres so that the Supplementary Survey staff dealt with 91 per cent. of the total cropped area. Within the tracts under Supplementary Survey, Revision Surveys were completed on an occupied area of 621,299 acres, and Extension Surveys were made of 154,685 acres most of which will be brought under Supplementary Survey for the first time in 1909-10. At the close of the year the total area under Supplementary Survey amounted to 48,052 square miles against 47,542 square miles in June 1908.

(*a*) Area under Supplementary Survey.

After two conferences presided over by the Financial Commissioner a preliminary issue of the Land Records Manual was made for the guidance of Superintendents of Land Records in June 1909. Much, however, remained to be done before the issue of the complete edition. Forms had to be revised and questions raised at and after the conferences had to be dealt with. It is probable that the final edition will, however, issue within the next few months. Another important work of the year was the completion of the enquiry into the Revision Survey needs of the Lower Burma districts where extension of cultivation produces most changes. The recommendations based on the enquiry involve the entertainment of an additional establishment costing about Rs. 58,000 per annum.

(*b*) Other important works of the year.

The budget for 1908-09 provided Rs. 1,14,260 for the Controlling Office out of which some Rs. 32,000 may be deducted for the administration of Settlements. The Land Records debit for the Controlling Office was thus Rs. 82,260. Under the head of Special Surveys the provision was Rs. 1,52,900. Under District Land Records, Cantonment surveys and Town surveys Rs. 13,55,100, and under Survey Schools Rs. 42,000: a grand total of Rs. 16,32,260. The receipts actually credited to Land Records were Rs. 5,197 for Survey School fees, but besides these Rs. 32,516 were realized from fees collected for *patta* surveys. Without making allowance of pension and leave charges the total net cost of the Department was thus something under 16 lakhs.

(*c*) Cost of the Department.

CHAPTER II.

SPECIAL DEMARCATION AND SURVEYS.

2. *Demarcation preliminary to Survey.*—Demarcation in advance of Cadastral Survey by local agency was undertaken in the Akyab, Sandoway and Amherst Districts, covering 216 square miles with an occupied area of 32,371 acres. A special Demarcation Officer dealt with the demarcation

of Amherst. Elsewhere the work was executed by local Inspectors and Surveyors under the supervision of the District Superintendents of Land Records. Adequate assistance was rendered by village headmen and cultivators. The demarcation in all cases, though scattered and comparatively difficult, is reported to have been satisfactorily done. The Amherst Demarcation Officer, Maung San Nyun, is commended for his good work. No charges were incurred on the work performed by the local staff, but in Amherst the cost was Rs. 3-8-0 per square mile.

3. *Survey by No. 7 Party, Survey of India Department.*—In accordance with the orders of Government, no further Cadastral Surveys are to be undertaken in Burma by Survey of India Parties. The work of No. 7 Party in the year was thus confined to the recess-work of the previous field-season's operations in the Thayetmyo, Pegu, Yamèthin and Pyapôn Districts.

4. *Revision Surveys of kwins, Statement II.*—Revision Surveys are undertaken in areas already under Supplementary Survey. They are ordinarily necessitated by large extensions of cultivation or by changes of natural features so great that the step-by-step methods of annual Supplementary Survey have failed to produce a correct and up-to-date record. Hitherto the heavier part of revision work has been done by Special Parties moving from district to district but the intention in future is to employ small flying columns attached to the staff of the district.

(*a*) Recess work connected with Revision Surveys of previous year.

The recess work of last year's field surveys was duly brought up, and the maps sent to be printed, for the districts of Hanthawaddy, Amherst, Thatôn, Minbu, Meiktila and Myingyan. Office work was examined in the first four districts by the Assistant Director, and found to be quite of a professional type except in Minbu where it was only fair. The mapping was also inspected by the Assistant Director in Meiktila and Myingyan and proved satisfactory.

(*b*) Distribution of Revision Survey field-work.

During the year revision surveys by special agency were continued in the Akyab, Hanthawaddy, Amherst, Thatôn, and Meiktila Districts and were started in Mandalay and Yamèthin. The operations in Amherst, Thatôn and Yamèthin were conducted by a special Superintendent of Land Records, and in the other districts by the local Superintendents.

(*c*) Holding-marking by Revision Survey Parties.

Holding-marking was undertaken concurrently with the survey in all cases except Meiktila where Settlement Party No. 5 undertook the work. Complaints have been received from local officers that surveyors when showing holdings on their revised maps have ignored the existing records and have altered owners' names and boundaries. The matter is under enquiry.

(*d*) Revision Surveys in the Akyab District.

A scheme for revision surveys by a special staff in the Akyab District, extending over a period of five years, was commenced in the year. The year's programme covered 34 square miles and of this 29 square miles were completed. The Assistant Director on inspecting the field-work found it to be of good quality. Owing to financial considerations, which affect other survey programmes as well, further operations have been postponed for the present.

(*e*) Revision Surveys in the Hanthawaddy District.

This was the third year of the four years' programme of revision surveys in the Hanthawaddy District. The programme of the year was slightly altered on the recommendation of the special officer (Mr. Gibson), who was deputed to draw up revision survey programmes for the principal districts of Lower Burma. Areas not yet ripe for survey were excluded and *kwins* around Rangoon Town District including the rising town of Syriam were taken up instead. The survey programme of Hanthawaddy has been drawn up so as to keep ahead of the reclassification operations of the Settlement Party. The block assigned for survey in the year has been completed; and now only another year's work remains to be done. The field work of the year was inspected by the Assistant Director and proved to be of distinctly good quality.

(*f*) Revision Surveys in Amherst and Thatôn Districts.

Revision surveys in the Amherst and Thatôn Districts by the Special Party were continued in the year, though on a restricted scale, and with the party at a diminished strength. The work towards the end of the open-season was carried out under trying conditions, owing to the early advent of the monsoon; and the surveys were scattered, which added to the difficulties. Owing to these causes it was found impossible to complete the re-survey of about six square miles of country; though the year's estimated area was exceeded by close upon thirty per cent. This work will therefore devolve upon the local staff. With this exception all the areas for revision survey preliminary to resettlement in Amherst and Thatôn have been practically completed. The *partalling* done by the inspecting staff was very thorough, and the hunting up and replacing of permanent survey marks well done. The Assistant Director inspected the field-work and found it, on the whole, to have been of very good quality. This year brings the work of the Special Party to an end, and the Party will be disbanded before long. Efforts have been made to secure work for the members of the staff in Land Records Offices, the Public Works Department, and elsewhere. Some of the men have been in continuous temporary employ on special agency surveys for many years.

(*g*) Revision Surveys in the Mandalay District.

The revision of survey in the Mandalay Canal tract of the Mandalay District, referred to in last year's report, was continued in the year. This revision was necessitated by an alteration of the irrigation system. A good outturn of work was secured and the season's programme completed. The Assistant Director examined the work on the ground, and found that both the traversing and detail survey were of a high order.

(*h*) Revision Surveys in the Meiktila District.

The unfinished revision survey work of last season in the Meiktila District was completed early in the year. The area for re-survey was largely reduced by the exclusion of third class *Ya* lands, as such areas are no longer to be regularly surveyed, but merely mapped annually, as provided for in the Directions for this class of work. The field-work was examined by the Assistant Director who found the survey to be of very good quality on the whole.

(*i*) Revision Surveys in the Yamèthin District.

Revision surveys in the Yamèthin District were undertaken on an extended scale for the first time during the year. The work was carried out under the supervision of the Officer in charge of the Amherst-Thatôn Special Survey Party. Many *kwins* originally proposed for partial resurvey had to be wholly surveyed and although the staff surveyed about twenty-five per cent. more than the estimate, some 17,000 occupied acres remained unsurveyed at the end of the season. This will be taken up gradually by the local staff. The Assistant Director inspected the survey and found the work to be of fairly good quality.

(*j*) Revision of oil-field maps in the Magwe District.

In the Magwe District a revision by a special staff of the topographical maps, on the scale of eighty feet to the inch, of the Twingôn and Bemè native Oil Reserves of Yenangyaung was taken up and completed under the supervision of the Superintendent. Traces of the revised maps were supplied to the Committee appointed to investigate the conditions of the reserves.

(*k*) Proposals for future Revision Surveys.

In the Mergui District proposals for the revision survey of some 7,500 acres of cultivation are under consideration. The surveys are advisable to secure the accurate mapping of valuable rubber plantations, and to get up-to-date maps where changes have proved too extensive for the regular staff. The resurvey by a Special Staff of about 6,000 acres of cultivation in Kyaukpyu has been sanctioned but operations are postponed for lack of funds.

5. *Extension Surveys of kwins, Statement III.*—Extension surveys are carried on in areas outside the limits of the tracts already under Supplementary Survey. The inclusion of these areas in the operations of Supplementary Survey is usually justified by the spread of cultivation. Considerable enhancements of revenue

result from these extension surveys, and in Amherst where the under-measurements of the *taikthugyis* are said to be notorious the enhancement following on survey should be very large.

(*a*) Recess work connected with Extension Surveys of previous year.

The map and area work relating to the field surveys executed the year before in the districts of Akyab, Kyaukpyu, Tharrawaddy, Minbu and Amherst-Thatôn were finished during the recess-season. The work of the last four districts was inspected by the Assistant Director, and was of fair quality in Minbu and of a high order in the other cases, the mathematical results of the traverses being excellent.

(*b*) Distribution of Extension Survey field-work.

During the year of report Extension Surveys by Special Parties were continued in the unsettled tracts of the Akyab, Tharrawaddy, Amherst and Thatôn Districts, and new surveys were undertaken in Sandoway. The surveys were in charge of the Local Superintendents of Land Records, except in Amherst and Thatôn where the survey was conducted by a Special Officer. The surveys embraced both traverse and cadastral work, except in Sandoway where the traversing was done by a Special Staff and the detail survey by local surveyors.

(*c*) Holding-marking by Extension Survey Parties.

Holding-marking was done concurrently with surveys and traces were also prepared for the use of the Supplementary Survey and the Settlement, where one was to follow.

(*d*) Extension surveys in the Akyab District.

The four-year programme of work in the Akyab District was brought to a termination. Owing to unavoidable delays an area of about four square miles of the detail survey was unfinished although the whole of the traversing was done. The local staff will be able to finish this detail survey during the ensuing field-season. The main circuits were well run, and the verificatory azimuths sufficient. Field-work was examined by the Assistant Director, and was on the whole of good quality. The local *partals* were, however, insufficient. The survey of the cultivated tracts was decidedly good, but in most cases the outlying topographical features were eye-sketched and necessitated re-doing. The survey was undoubtedly difficult, fields were small and cultivation chiefly in valleys and more or less scattered.

(*e*) Extension surveys in the Sandoway District.

The programme of work in the Sandoway District was of limited extent, and was duly completed. But three additional *kwins* which were taken up had their traverses done, and the detail survey only partially finished. The small balance of work will, however, be undertaken next season at no extra cost. The work was examined by the Assistant Director who pronounced it of fair quality.

(*f*) Extension surveys in the Tharrawaddy District.

In the Tharrawaddy District the unfinished work mentioned in last year's report, was taken up and completed in the year. The local Inspector, associated with the survey during the previous two years, supervised the operations under the orders of the Superintendent of Land Records, in addition to his other duties. The Assistant Director inspected the work, and found that it had been slow and was capable of improvement; but, later on, better work was secured.

(*g*) Extension surveys in the Amherst and Thatôn Districts.

In the Amherst and Thatôn Districts the original surveys were executed conjointly with the revision surveys by a Special Survey Party. The area mapped in Thatôn was not very large, but it was considerable in Amherst. The surveyed area was seven per cent. over the estimate, and the entire programme of the season, of both traversing and cadastral work, was accomplished. The staff worked hard, and a good season's work was forthcoming. The traverses were intelligently laid out and connected, check azimuths were numerous, and the *partalling* was thorough. The mathematical results are particularly good. The field-work was tested by the Assistant Director, and was of a high professional standard.

6. *Town Surveys, Statement IV.*—The demarcation and survey of the more important provincial towns, railway and other, have been vigorously prosecuted

during the last five years. Including Rangoon and Bassein which were surveyed by the Survey of India Department many years ago, 145 towns have been completed; the surveys were carried out by the local Superintendents of Land Records. The standard scale is 64 inches to the mile, though in special cases scales of 40 feet, 50 feet and 100 feet to the inch have been adopted. Within the next few years it is anticipated that practically all the towns considered worth surveying will have been completed.

(*a*) Summary of Town Survey operations.

Owing to lack of funds next season's programme will be restricted to the completion of the Moulmein Town survey, and to the survey of three towns in the Katha District. Proposed surveys in Hanthawaddy (five new towns,) in Thatôn (three new towns), Mergui (one town), Upper Chindwin (four towns), Kyauksè (five towns), Meiktila (four towns), and Yamèthin (four towns), have been postponed.

(*b*) Future Town Surveys.

The mapping and area work of the previous year's Town Surveys in the districts of Hanthawaddy, Tharrawaddy, Prome, Toungoo, Thatôn, Thayetmyo, Minbu and Katha, were duly completed in the recess. The recess work, in all cases but that of Katha, was inspected by the Assistant Director and was found, without exception, to be quite satisfactory.

(*c*) Recess work connected with Town Surveys of previous year.

During the year practically only two surveys were in operation, that of Moulmein Town and of Hlègu Town in the Pegu District. The Moulmein Town survey was for the reasons given in last year's report, placed in charge of the Superintendent of the Special Survey Party. The demarcation was done by one Boundary Officer and two Demarcation Officers, with two additional Demarcation Officers, subsequently sanctioned; but the work is still in progress, though it is expected to be completed by the end of next December. The town lands rolls have not yet been taken in hand. The scale adopted for the survey of the residential area was 50 feet and that for the agricultural area 100 feet to the inch. Traversing was completed, while the detail survey of the whole of the agricultural section and about two-thirds of the residential section, was done. The remaining work will be undertaken in the early part of next field-season and will be supervised by the local Superintendent of Land Records. All the five divisions of the town were properly enclosed by main and minor circuits, the traverses geographically connected, and several verificatory azimuths observed. Owing to the exceptionally large scale of the survey of the town proper, it was deemed prudent to keep the angular works of the traverses to seconds and the linear work to one decimal place. The field-work was inspected by the Assistant Director and was of a high order.

(*d*) Moulmein Town Survey.

The survey of Hlègu Town which had been kept in abeyance for two years for want of funds was undertaken in the year. The demarcation was done by a Demarcation Officer and is reported to have been thorough and quite satisfactory, and the town lands rolls were prepared.

(*e*) Hlègu Town Survey.

In Hanthawaddy a small town planning staff was employed in laying out a series of new spaces, 13 in all, for the formation of projected towns. The demarcation and survey here were well done.

(*f*) Planning of new towns in Hanthawaddy.

In Pakôkku the traverse survey and part of the detail survey had been done in the previous year. The detail survey was completed during the year of report.

(*g*) Pakôkku Town Survey.

In Magwe the demarcation of two previously surveyed towns was carried out and the demarcation proceedings are in hand. In a number of towns, including Akyab, of which the survey has been done, demarcation work is to be postponed till further orders are received about demarcation procedure.

(*h*) Demarcation in Towns.

In the Mandalay District a small survey of an extension of the Maymyo Town block area was carried out.

(*i*) Maymyo Extension Town Survey.

The proposed topographical survey of Thandaung Town in the Toungoo District has been abandoned, as the Financial Commissioner decided that a new survey was not required at present; the existing maps are to be used for the issue of leases and the up-keep of ownerships. The survey of Mogôk Town in the Ruby Mines District has been further postponed, as contemplated alterations in the town by the Burma Ruby Mines Company have not been carried out.

(*j*) Proposed Town Surveys in Thandaung and Mogôk.

In Rangoon Town revisions of survey will be necessary especially where there has been reclamation and resettlement of houses. Portions of the town were visited by the Commissioner of Settlements and Land Records in company with Mr. Gibson, Superintendent of Land Records, on special duty, and the Local Superintendent of Land Records. Mr. Gibson's report has been forwarded to the local officers for consideration and their proposals are awaited.

(*k*) Necessity for revision of Survey in Rangoon Town.

In some towns the Town Land Rolls were completed during the year and in others progress was made but the work proceeds slowly. In Thayetmyo and Moulmein the rolls have not yet been started. In Pyapôn the rolls of three towns are done, and one remains; in this district much energy has been shown in dealing with encroachments in towns. In Toungoo the rolls of nine towns are finished and that of the last is in hand. The rolls are now completed for Sandoway, Bassein, Henzada and Myaungmya. The rolls for 107 towns have been done so far, and those of 33 towns are either in hand or have yet to be taken up. The preparation of the rolls has ordinarily to be undertaken by the Township Officer except for the district headquarters town where the roll is usually prepared by the Superintendent of Land Records. Special Officers have been proposed for the preparation of Rolls in some districts but except in Mandalay Town where conditions are special and pressing the appointment of special officers appears unnecessary.

(*l*) Town Land Rolls.

7. *Fishery Surveys, Statement V.*—The reduction and final preparation of the Fishery maps of the previous year's surveys in the Pyapôn District were duly completed in the recess season and the maps printed.

(*a*) Recess work connected with Fishery Surveys of previous year.

In Hanthawaddy District the demarcation and subdivision of 96 fisheries were done by a special Myoôk (Maung Thet). The work occupied three seasons ending with the year of report. The survey was executed by a special staff in the year, and the entire programme of work completed within the period of sanction. The surveys were made with the plane-table, and based on the printed 16″ *kwin* Maps. The supervision by the Inspector was far from sufficient or good, and much of the work had to be either gone over again or done afresh. The work was checked by the Assistant Director who found it, on the whole, of fair quality.

(*b*) Fishery Surveys in Hanthawaddy.

In the Pegu District a small staff was at work for a short period in connection with an enquiry into and subdivision of fisheries by *Inkunwun* Maung Po Mya. Existing maps were revised and brought up to date, and new maps prepared for newly constituted fisheries. The survey was carried out by means of the plane-table, with the aid of the 16″ *kwin* Maps.

(*c*) Fishery Surveys in the Pegu District.

Proposals were received for the revision of the fishery maps in the Tharrawaddy District. This revision was considered necessary owing to extensive changes in the fisheries since the preparation of the maps many years ago. The proposed operations have been postponed owing to lack of funds. In the Mandalay District existing maps have become obsolete owing to the subdivision of fisheries in recent years, and a small special establishment has been asked for to assist the local surveyors in preparing the revised maps.

(*d*) Proposed Fishery Surveys in Tharrawaddy and Mandalay.

8. *Patta Surveys by Special Staff, Statement VI.*—The survey of grants for cultivation is restricted to Lower Burma, and in several districts the issue of *pattas* is now suspended.

(*a*) Distribution of *Patta* Surveys.

During the year *patta* surveys were conducted in 15 districts; in 10 of these the establishments were paid on the contract, or piece-work system, in four they received regular pay, and in one both forms of remuneration were employed. The surveys were generally of a correct type, though in Kyaukpyu they were not altogether satisfactory; and in Myaungmya the survey was at fault in several instances and had to be re-done. In Bassein, too, a number of maps had to be returned for want of surrounding detail. In Akyab delays in surveys are said to have taken place. The number of cases pending for survey in Kyaukpyu is not creditable. In Pyapôn and Toungoo a large number of cases were received too late in the season for survey. Cases left over for survey next season in Amherst and Toungoo are numerous.

Demarcation prior to survey was done by applicants themselves, and in most cases it was sufficient; but in Pyapôn no less than 153 cases were reported for rejection owing to faulty demarcation. In Amherst the figures relating to areas and numbers of cases dealt with by the Special and Local survey staffs and the Special and Local Myoôks are hoplessly mixed; they should be separately dealt with, as provided for in the prescribed form of Report. In Tavoy the grants are chiefly for garden cultivation; elsewhere they are practically all for rice cultivation.

(*b*) Demarcation prior to *patta* surveys.

The fees realized are generally in excess of the cost incurred for the survey; where the statement shows smaller realizations a portion of the fees was collected in previous years. In Akyab and Amherst, also in Mandalay, and perhaps elsewhere, fees are included for areas dealt with by the local staff; this is manifestly wrong, for in such cases a charge may only be levied for the cost of special demarcation if any. In Myaungmya the survey fees were divided equally between the Inspectors and Surveyors, which scarcely seems equitable. The Divisional Commissioner observes that as the work was re-checked by the local Inspectors, the *patta* Inspectors appear to have got more than their fair share of the payments. In Mergui as the applications fell below the estimate the staff was proportionately reduced. In Amherst Township Officers and Land Records Inspectors took part in the checking of the surveys, in addition to the work performed by the special Inspectors. In Mergui where there were no special Inspectors, the local Inspectors were largely employed on reporting on *patta* applications instead of the Township Officers.

(*c*) Fees realized for *patta* surveys.

In the districts of Pyapôn, Toungoo and Amherst special *Patta* Myoôks had to be employed for the disposal of grant cases, subsequent to survey, owing to the heavy character of the work; in the last named district Township Officers also took part in this duty. In Pyapôn the *Patta* Myoôk was appointed in January and the Deputy Commissioner suggests that it would have been better had he been appointed earlier in the year, an arrangement which would be advantageous in other districts also.

(*d*) Employment of *Patta* Myoôks.

Although in Hanthawaddy *pattas* are no longer issued, eight special leases for rubber cultivation, and for stock and dairy farming were surveyed. These leases had an aggregate area of 760 acres and the survey cost Rs. 825 which was covered by fees. Several rice land areas converted into building sites for which leases were given out were also surveyed and fees covering the cost of survey were levied. As none of the above areas are regular *pattas* they do not appear in Statement VI. In Mandalay the leases issued were for cultivation alone and have been shown in the statement.

(*e*) Special lease lands surveyed in Hanthawaddy and Mandalay.

In the Môn canal area a staff was employed on the demarcation and survey of lands available for cultivation. The position of projected distributaries was ascertained from the Irrigation Department and lands commanded by these distributaries were marked out in 30-acre blocks separated by approaches. Each block was then divided into four lots of 7·5 acres.

(*f*) Survey and allotment of Agricultural lands in the Môn canal area of Minbu.

The area for survey was originally estimated at 7,000 acres, but it has been found that some 30,000 acres are involved. The lands to be surveyed include not only the lands which are actually waste but areas on which squatters have established themselves within the last few years. A Special Officer was appointed to allot leases of the surveyed blocks to desirable persons. During the season some 8,000 acres were demarcated and surveyed: the Lease Officer allotted 1,800 acres. On the expiration of the period of sanction the survey and lease establishments were disbanded. The work is important and it is hoped that funds may be made available for continuing the operations. The demarcation and survey work was inspected by the Assistant Director who found the surveys accurate and the plots mathematically laid out and properly demarcated. *Kwin* traces were prepared for the use of the Lease Officer showing the irrigable and non-irrigable lands and the limits of cultivation up to the year 1900-01, subsequent to which extensions were to be disregarded. It is anticipated that the fees levied will more than cover the cost of the operations.

CHAPTER III.

SUPPLEMENTARY SURVEY WORK.

9. *Area under, and cost of, Supplementary Survey, Statement I.*—The area under Supplementary Survey during the year was 48,052 square miles, an increase of 510 square miles on the area in 1907-08, excluding 77 miles now brought under Supplementary Survey in Pakôkku. In Akyab 21 square miles and in Tharrawaddy 28 square miles were brought under Supplementary Survey for the first time as the result of the Special Extension Surveys. Kyaukpyu shows an increase of 32 square miles apparently due to the same cause. An increase of 52 square miles in Hanthawaddy and a decrease of seven square miles in Myaungmya are said to be due to incorrect figures in previous years. Prome shows a decrease of one square mile from the same cause and Bassein a similar decrease owing to the extension of the municipal limits. In Pyapôn 125 square miles recently surveyed by the Survey of India have been brought under Supplementary Survey. The Special Revision Survey Party prepared the way for the introduction of Supplementary Survey into 150 square miles of country in Thatôn and 170 square miles in Amherst. Seventy-seven square miles are now shown as under Supplementary Survey in Pakôkku where a Settlement party is now at work. In Magwe there is a decrease of 50 square miles owing to the formation of new Forest Reserves. A decrease of two square miles in the Lower Chindwin is due to corrected figures. In Meiktila four square miles containing no permanent cultivation were excluded from Supplementary Survey and in Myingyan a decrease of three square miles is explained by the transfer of an Island to Pakôkku.

(*a*) Area under Supplementary Survey.

The total land assessment for the year was Rs. 2,84,67,013 as against Rs. 2,62,20,575 in the previous year. Revised rates were introduced in Pyapôn and intermediate rates in Bassein gave place to full rates. The greater part of the increase is due to natural expansion and also to the very favourable character of the season. In Yamèthin large areas were found to have been wrongly omitted from assessment and enquiry is being made into the subject.

(*b*) Land assessments on areas under Supplementary Survey.

The cost of Superintendence and Inspection has increased from Rs. 4,56,806 to Rs. 5,06,612, *i.e.*, from Rs. 9·61 to Rs. 10·54 per square mile. The cost of the Survey staff is now Rs. 7,85,766 as against Rs. 7,71,414 last year or Rs. 16·35 per square mile as compared with Rs. 16·23. The total cost of Supplementary Survey is 1·332 annas per acre, an increase of ·036 on 1907-08 but it is only 4·54 per cent. of the total assessment compared with 4·68 per cent. in the previous year. The increased cost of supervision is due to the reorganisation scheme which was introduced in April 1906. The enhanced cost of Survey is due in part to the grant of privilege leave to the Surveyors. The partial introduction of Supplementary Survey into Pakôkku is responsible for a very high cost

(*c*) Cost of Supplementary Survey.

per square mile and per acre in that district but this will decrease when regular Supplementary Survey is introduced in the whole district. At present the Pakôkku staff is employed for most of the year on Settlement work. In Shwebo the staff has been increased by two Inspectors and 16 Surveyors as well as 16 temporary Surveyors. In the Upper Chindwin local allowances have been sanctioned and drawn from September onwards.

10. *Submission of Assessment Rolls.*—In Kyaukpyu two Surveyors submitted their rolls late of whom one was dismissed and one reduced. In Hanthawaddy the Land Records staff assisted the Settlement staff with crop-cutting and in consequence the rolls from ten charges were nearly a week overdue and those from ten others almost a fortnight. Some delay was also caused by the Village Headmen's Abstracts being prepared by complete village tracts and not by *kwins*. The advantages of getting complete rolls for each village are obvious, and the delay in preparing the rolls was justified. In the rest of the Pegu Division all the rolls were submitted in time. In the Irrawaddy Division one *Kaing* roll was late owing to a dispute as to the district boundaries between the Henzada and Tharrawaddy Districts. In Toungoo six Surveyors submitted their rolls between the 17th and 22nd of February, in one case the explanation is that the Surveyor was arrested on a criminal charge. A similar reason accounts for the delay of a *Kaukgyi* roll in Thatôn. The *Taungya* rolls from Bilin Township were brought in three days late by the Inspector who has been reduced and the *Mayin* rolls of one charge were 19 days late. In Amherst three Surveyors submitted their rolls between February 16th and 19th, the explanation being the extension of Supplementary Survey to new areas. In Tavoy four rolls were submitted between the 15th and 18th of February and in Mergui the same number was submitted between the 15th and 20th. In one circle in Mergui the rates were found wrong and all the registers had to be rewritten and six Surveyors were late with their *Kaing* rolls owing to the difficulties of communication. In Pakôkku five *Kaing* rolls were late. In Magwe numbers of rolls were late at every season though there is some improvement on last year. The explanation is the insufficiency of the staff and the Divisional Commissioner records his opinion that "there will always be delay in the collection of the revenue until the extra staff is sanctioned." In Mandalay from three to five rolls were late every season by periods ranging up to eight days. This also is an improvement on the previous year. In Katha 26 out of 38 Surveyors submitted their *Kaukgyi* rolls late, the last being received on February 24th. The introduction of new rates, the shorthandedness of the staff and the November rains are the explanation given. In Shwebo 44 rolls were late by periods ranging from three to six days. The explanation is in part attibuted to the employment of Revenue Surveyors on crop reaping for the Settlement Department in the Canal area. The amount of crop measurement work done by the Land Records staff in Shwebo was not large however. In the Lower Chindwin District the *Kaing* rolls of one township were late owing to the death of the Inspector from hydrophobia; other rolls were late owing to the Surveyors being engaged in an attempt to revise Town Surveys. The Town Surveyor for this district is also employed in Sagaing. In Kyauksè four Surveyors submitted their *Kaukgyi* rolls ten days late owing to the November floods. In Meiktila the rolls were nine days late owing to the November rains and to work done by the Land Records staff in connection with the Settlement. In Yamèthin one roll was two days late. In Myingyan some of the *Kaukgyi* rolls were late owing to the assessment of early crops on *Tazè* land at the *Kaukgyi* instead of the *Kaing* assessment. Several *Kaing* rolls were late in this district.

11. *Offices and Record Rooms.*—The Offices and Records Rooms in every district were inspected by one or other of the Administrative Officers of the Department. In Kyaukpyu the office is now in the new building but the Record Room does not give satisfaction. In Hanthawaddy it was found necessary to address the District Judge on the subject of the slackness of the Township Judges in reporting transfers of property made by order of the Court. There is, however, a general improvement in the reporting of transfers both by Sub-Registrars and Civil Courts and by the cultivators

(a) Headquarters offices and Record Rooms.

themselves. It has been found in Hanthawaddy that when reprinting maps the numerators of all fractional numbers were omitted thus destroying the serial order of the numbers on the map. The area statements are also in considerable confusion. The accommodation provided for the Record Room and Office is inadequate and the records are in confusion. In Pyapôn the Record Room roof leaks and in Bassein a separate ante-room is still urgently required. In Hanthawaddy, Prome and Mergui the map tubes are worn out and will require to be renewed. In Magwe an extension of the Record Room is urgently needed, and a similar extension is wanted in Pakôkku. The rearrangement of the records in Pegu is awaiting the renumbering of the *kwins*. The office staff is said to be both insufficient and underpaid. In all districts the rearrangement of the records has been in abeyance pending the publication of the Land Records Manual, advance copies of which were distributed amongst Superintendents of Land Records by the close of the agricultural year. In a number of districts the clerical establishment is considered inadequate or insufficiently paid and the reorganisation scheme is anxiously expected.

(*b*) Surveyors' offices.

In Prome one Surveyor's office was destroyed by fire and all records and Government property burnt except the *kwin* maps. One office was destroyed in Myingyan. Last year the number of Surveyors' offices destroyed was ten. The decrease is probably due to the nature of the season but Surveyors are beginning to build themselves better houses with the aid of housebuilding advances.

(*a*) Re-surveys by local staff.

12. *Maintenance of the Survey by local staff, Statement VII.*—The total occupied area resurveyed by the local staff was 270,881 acres. In most cases this includes the bringing up of the interior details in holdings but excludes ordinary *kazin* corrections. The areas revised in Akyab, Hanthawaddy, Pegu and Henzada, are considerable, and they are also extensive in Myaungmya, Thatôn, Amherst and Shwebo. This reflects credit on the Superintendents concerned. In Bassein about two-thirds of the revision surveys were done by hired Surveyors whose emoluments were apparently paid by the rich *taikthugyis* for whose benefit the men were engaged.

(*b*) Extension surveys by local staff.

The extensions, both large and small, surveyed by the local staff are also satisfactory, especially in the districts of Hanthawaddy, Pegu, Pyapôn, Toungoo, Thatôn, Magwe and Sagaing. The total accounted for under this head represents 80,551 acres under occupation. Good inspections of the survey work were made by the Superintendents in Akyab, Pegu, Pyapôn, Toungoo and Sagaing but in several other districts Superintendents did little or no inspection work. On the other hand, the Inspectors generally checked the surveys sufficiently, and there is good reason for believing that, as disclosed by the *partals*, the work executed, taken as a whole, was well done. In several instances, notably in Akyab, Ma-ubin and Thatôn fresh plots were made use of for the surveys in large part, but in most cases old published sheets were utilized, while in a few the surveys were done on the year's Supplementary Survey maps. In Amhert one Surveyor was removed and the conduct of two others is under investigation, for unsatisfactory work.

(*c*) *Patta* surveys by local staff.

Patta surveys are not very extensive now and where numerous are carried out by special establishments (paragraph 8, Statement VI). By far the largest outturn by the local staff occurred in Amherst, where the work also was well checked; a result creditable to the Superintendent. In Hanthawaddy 77 leases for industrial purposes with an area of 52 acres were surveyed but these have not been included in Statement VII for the reasons given in paragraph 8. In Mandalay leases for cultivation have been shown. In Katha, besides, what appear in the statement, an area of 2,880 acres was surveyed for a mining lease.

The annual survey of impermanent cultivation was practically confined to seven districts of Upper Burma. In Pakôkku close upon 50,000 acres were surveyed, and in Sagaing and Myingyan some 27,000 and 18,000 acres, respectively. Temporary Surveyors, on regular pay, are employed for these annual resurveys in all districts where such cultivation is extensive. Elsewhere the regular staff attend to this work.

Besides the surveys already mentioned local Surveyors have in many districts undertaken surveys by holdings for assessment purposes in tracts beyond the limits of Supplementary Survey. In Katha 1,758 acres were regularly surveyed and mapped in the Mohnyin valley in the unsettled areas. No extra cost was entailed in the prosecution of these various surveys.

(*d*) Surveys in areas beyond the limits of Supplementary Survey.

The regular staff is carrying on the mapping and area work connected with the locally executed surveys. For Shwebo application has been made for a small extra staff to help in completing the office work for the revisions done in the canal tract. In some districts where reprints of *kwin* maps are required all changes have been brought on to the reprints from the latest Supplementary Survey sheets.

(*e*) Office work connected with surveys by local staff.

13. *Scheme for future Revision Surveys, Statement VII.*—The areas requiring re-survey continue to be large. They total altogether 2,383,334 acres of occupied area or 15 per cent. of the gross occupied area under Supplementary Survey shown in Statement I.

(*a*) Areas requiring resurvey.

It is hoped that the resurveys will be rapidly reduced when flying columns of special Surveyors have been attached to the regular establishment of the districts where changes are most numerous. This is the system to which reference was made in paragraph 20 of last year's report. Mr. Gibson, the Special Officer, who was placed on special duty for the enquiry submitted his recommendations towards the close of the year. The report covers the nine Lower Burma districts in which changes are most numerous. In these nine districts it is suggested that small permanent establishments should be maintained for bringing up the survey gradually within the next 10 years. The work to be done by the special establishments in these districts consists of about 1,145,000 acres to be surveyed field-to-field and about 115,000 acres in the more or less flooded tracts, to be surveyed by holdings. The regular staff is expected to do about 580,000 acres of field-to-field survey as its share. The cost of the establishment averages about Rs. 58,000 per annum. The proposals are now before the Government.

(*b*) Resurveys by flying columns attached to district staff.

The resurveys by local staff are being pushed on systematically. In Pegu, where the local staff was recently augmented by 14 Surveyors, it is confidently expected that all the areas for revision by the local Surveyors will be resurveyed during next season. In Kyaukse revision is necessitated by the remodelling of canals, and is found in blocks where fields have assumed some permanency. Meiktila and Myingyan have completed their resurveys and no longer show areas for revision by local or special staff. In Yamèthin the areas left over for revision are very large, and the district staff will have to be supplemented as it is inadequate for this survey work.

(*c*) Re-surveys by local staff.

14. *Supplementary Survey in Towns, Statement VIII.*—During the year Supplementary Survey of towns was in progress in 23 districts. One hundred and forty-five tonws have been surveyed on a large scale and in 80 of these towns Supplementary Survey is being carried on.

(*a*) Towns under Supplementary Survey.

Delays in starting Supplementary Survey have occurred owing to difficulties about forms. The original forms had not been brought on to the guard book and nearly all of them have been revised when drawing up the Land Records Manual. The forms should shortly be ready for issue.

(*b*) Difficulties about forms of Registers.

The work of Rangoon and Mandalay Towns is in charge of separate Superintendents of Lands Records; in all other cases it is conducted by the District Superintendents. The work of Supplementary Survey includes the survey and assessment of both town and suburban lands, both residential and agricultural. The preparation of both the rent and revenue rolls, Municipal and other, by the Town Surveyors is now becoming more general. Steps have been taken to properly protect theodolite stations in most towns.

(*c*) Supervision and methods of town work.

In paragraph 19 of last year's report mention was made of the unsatisfactory working of the Mandalay Town Lands Office. Since then the office has been frequently inspected. New methods have been introduced, and the working has considerably improved. In Rangoon Town, also, a great deal has yet to be done to place matters on a good working basis. The maps are much out of date and the area statements have not been maintained, while the boundary and survey marks have been much neglected in the past; a scheme has been drawn up by Mr. Gibson for strengthening the staff. The proposals are now before the Divisional Commissioner and a consultation will be held before they are sent up to Government.

(*d*) Towns of Mandalay and Rangoon.

The cost incurred on account of the Supplementary Survey in towns is under recent orders shared equally between the Provincial and the Municipal or District Funds. The charges incurred include survey, inspection, supervision, direction, etc., and the method of determining these charges has yet to be decided. As was mentioned in last year's report conditions in Rangoon, Bassein and Mandalay differ from those in the smaller towns, but in Mandalay it is now proposed to adjust the charges as in District Towns.

(*e*) Cost of Town Supplementary Survey.

Out-door work was inspected by the Commissioner of Settlements and Land Records in Rangoon Town, by the Deputy Director in Mandalay Town, and by the Assistant Director in Bassein Town. The quality of the work in Rangoon and Mandalay is for the reasons already noted capable of considerable improvement; that of Bassein was found to be satisfactory. The survey and registration work of the year was, on the whole, well performed.

(*f*) Inspection of out-door work in Towns.

15. *Permanent Survey Marks.*—In Kyaukpyu and Sandoway the non-revenue collecting Village Headman takes little interest in these marks. In Hanthawaddy steps are being taken to compel the Village Headmen to submit their annual reports, and in Pegu and Pyapôn the steps already taken have resulted in a distinct improvement. In Bassein two-thirds of the Village Headmen are said to have done no inspection at all. In Thatôn for the first time every Village Headman was made to furnish the annual report, though the inspection was perfunctory in many cases. There is, however, a great improvement both in the work of the Village Headmen and the Revenue Surveyors. The Inspectors have neglected their duty as regards replacements. In Amherst and Pakôkku improvement is reported, and in the latter district two cultivators who deliberately destroyed marks were convicted and fined. In Mandalay the annual reports are submitted, but protection of marks is neglected. Most Upper Burma districts report that the Village Headmen are now taking more interest in this subject than formerly.

(*a*) Preservation of marks.

16. *Miscellaneous duties.*—Enquiry is being made in two cases in Henzada where the figures on tax tickets had been slightly changed. In Thatôn two tickets in one Village Headman's charge were found to be tampered with. The matter is under enquiry. One similar case is still under enquiry in Magwe. One Village Headman in Shwebo is under trial for having collected amounts in excess of the demand by means of altered tickets.

(*g*) Check of Tax Tickets.

In Hanthawaddy 242 encroachments on grazing-grounds aggregating 566 acres were detected. Twenty-five convictions have been secured and the remaining 73 cases which were sent up for trial are still pending. In Pegu 121 encroachments were detected and 16 convictions were obtained, but in no less than 81 cases the accused were acquitted owing to faulty demarcation. In Prome only three encroachments were detected, and in each case the offenders were fined. In Pyapôn the Superintendent in one grazing-ground alone found eight unreported encroachments aggregating 28 acres. The Surveyor was reduced to apprentice and the *taikthugyi* fined. Orders of eviction were passed without the institution of prosecution, the demarcation being faulty. In Bassein 162 prosecutions have been taken up with 66 convictions and 34

(*b*) Grazing-grounds.

acquittals up to date. In Henzada a Special Grazing-ground Officer is said to be necessary. In Myaungmya, 184 cultivators were found to have encroached on 959 acres of grazing-ground, and 173 prosecutions were instituted. Three old offenders were sent to jail and fines to the extent of Rs. 4,279 were inflicted. Only one encroachment is reported in Amherst where two reserved areas where reduced in size and proposals for reducing eight others are being made. Demarcation work is still being carried on. In several districts reinforced concrete pillars are being used. Wooden posts are not found to be satisfactory.

(c) Small scale maps.

In Hanthawaddy the one-inch topographical maps which had been much neglected were brought up to date. Vernacular one-inch maps of police-station jurisdictions and the half-inch map of the district are being reproduced at the Press. One-inch township maps and a new index map are also under preparation. In Bassein the one-inch maps have not all been received yet. In Toungoo, a quarter-inch map of the district was revised and reprinted. In Katha, Myingyan and the Lower and Upper Chindwin the one-inch maps are not yet published in full. New index maps will be required in several districts where *kwins* require re-numbering in one continous series.

17. *Village Headman's Scheme.*—In Tharrawaddy one *taikthugyi* retired during the year. In Hanthawaddy two *taikthugyis* died and one was convicted of embezzlement. In Pegu three *taikthugyis* retired and the remaining six *taikthugyis* will be relieved of all responsibility for Supplementary Survey with effect from April 1st, 1910. This is being done under a scheme which is being introduced experimentally into Pegu with a view to its extension if found to work well. In Pyapôn the remaining three *taikthugyis* have applied for permission to retire; orders are still awaited. In Bassein one *taikthugyi* over 55 years of age was given one year's extension of service. In Mergui one *taikthugyi* retired on account of sickness. Numerous proposals for entertainment of Surveyors and for redistribution of Surveyors' charges were considered and reported upon by the headquarters office during the year. In some cases the new Surveyors were wanted to fill the places of *taikthugyis* and in others their entertainment was necessitated by large increases in the cultivated area. The amalgamation of rural and urban charges involves much redistribution of work.

18. *Inspection of Field-Work, Statements IX, X, and XI.*—During the year the Supplementary Survey field work in 367 *kwins* was examined by the Administrative staff. Every district was visited except Sagaing, Thatôn, Mergui and the Upper Chindwin. The number of *kwins* checked by Superintendents has risen from 2,729 to 2,874 *kwins*. Mr. Paul heads the list with 203 *kwins*, followed by Mr. L'Estrange (168) and Mr. Ripley (152). Nine other Superintendents checked 100 *kwins* and upwards. Two officers (excluding the Superintendent of Land Records, Pakôkku District, where only a small area is under Supplementary Survey) checked less than 60 *kwins* as compared with eight last year. Mr. Thomas (31) again suffered from ill-health and was compelled to take leave during the field season. Mr. O'Donel whose short measure of inspection was specially mentioned last year, has again failed to inspect sufficient *kwins*, and the *kwin* notes submitted indicate perfunctory inspection. Considering the comparative lightness of the Katha and Sandoway charges, Mr. C. O'Hara in Katha and Mr. Littlewood in Sandoway should have done more inspection. Although Mr. Paul, Yamèthin, as mentioned above, visited a large number of *kwins*, the checks applied scarcely seem to have been sufficient, for later enquiry disclosed gross under-assessments which should have been detected and prevented in the field season.

(a) Inspections by departmental staff.

The number of *kwins* checked by Inspectors shows a slight falling off from 17,782 to 17,719. This is easily accounted for by the heavy rain in November which delayed field work by a fortnight. Very nearly half the *kwins* under Supplementary Survey are checked every year, though one-third is prescribed as the minimum. This proportion has been exceeded in every district except Mergui, Katha and Shwebo. In Lower Burma the highest average is 136 *kwins*

inspected per Inspector in Prome. This figure is equalled and exceeded by Yamèthin (136), Sagaing (138), Meiktila (144) and Myingyan (146). The lowest averages are in Mergui (71) and Sandoway (68), owing doubtless to difficulties of communication. In Yamèthin again, the remarks about the ineffectiveness of the Superintendent's inspections apply to the checking work done by the Inspectors.

(*b*) Inspections by Civil officers.

The number of *kwins* checked by Deputy Commissioners has risen from 157 to 193. This great increase is due rather to the efforts of one or two officers than to a general revival of interest in this matter. The Deputy Commissioner, Sagaing (Major Bowen), inspected 48 *kwins*, and the Deputy Commissioner, Minbu (Mr. Morrison), 36. The Deputy Commissioners of Tharrawaddy and Yamèthin checked 16 and 14 *kwins* respectively, but the remaining 27 Deputy Commissioners checked only 79 *kwins* between them, an average of less than three. No inspections were done in Kyaukpyu, Hanthawaddy, Ma-ubin, Toungoo, Thatôn, Amherst, Pakôkku, Magwe and Mandalay. Sixty-four Subdivisional Officers checked 844 *kwins* as against 634 *kwins* checked by 66 officers last year, an average of 13 as compared with 10. One hundred and fifty-eight Township Officers checked 1,763 *kwins*, an average of 11 as against 1,325 *kwins* checked by 161 officers last year, an average of eight.

The largest number of inspections by Subdivisional Officers was done by Maung Po Te in the Sagaing Subdivision, who inspected 93 *kwins*, and Maung Galè in the Myaung Subdivision of the same district who did 65.

The largest number of inspections by Township Officers was by Maung Tha Dun Gyaw, Kanni (85), Maung Po Le, Thazi (55), followed by the Township Officers of Sagaing, Myaung, Yanaung, Kyunhla, Kin-u and Ye-u, all of whom have inspected 40 *kwins* or more.

No inspections were done by the Subdivisional Officers of Pyapôn, Kyaiklat, Myaungmya, Moulmein, Kawkareik, Thazi and Meiktila, and the Township Officers of Myebôn, Taikkyi, Kyauktan, Thôngwa, Tharrawaddy, Yandoon, Pyapôn, Bogale, Kyaiklat, Dedayè, Bassein, Ngaputaw, Kyaunggôn, Kyangin, Zalun, Myaungmya, Einmè, Paung, Pa-an, Hlaingbwè, Yebyu, Thayetchaung, Yezagyo, Magwe, Katha, Mawlu, Kawlin, Wuntho, Pinlèbu and Pyawbwè. The thanks of the Department are due to Major Bowen, Deputy Commissioner of Sagaing, and to the Subdivisional and Township Officers of that district for their numerous inspections. Local officers can do much to secure accuracy of assessments and a higher standard of work generally, by carefully checking Supplementary Survey operations in the field as has been done in Sagaing.

The percentage of errors discovered by Superintendents is 18·10, by Inspectors 17·40, and by the District Officers 14·38. The number of errors in Survey was 13,232, in fallow marking 39,526, classification and rates 2,006, and in statistics 126,973.

CHAPTER IV.

TRAINING OF OFFICERS.

(*a*) Attendance of pupils.

19. *Survey Schools, Statement XII.*—The number of Government Survey Schools continues at 19. The total number of pupils on the rolls of the schools on the 31st March 1909 was 381, of whom 137 paid no fees. Exemption from the payment of the school fee is sometimes granted too freely. Attention has been drawn to this when inspecting the schools. The average number of pupils on the rolls in each month was 383. There was a marked falling off in the attendance at Prome, Mandalay and Mônywa. In Mandalay the diminution was due to the presence of plague in the town. The best attended schools are those of Minbu, Meiktila, Moulmein, Pakôkku, Sagaing and Henzada. The overcrowding at Moulmein has been relieved by the re-establishment of the school at Mergui for pupils from the Tavoy and Mergui Districts. Of the candidates admitted into the schools, 15 per cent. had passed by the VII Standard and 10 per cent. by the VI Standard. The attendance at class was fairly regular; but it was indifferent at Katha and Moulmein.

(*b*) Scholarships and Prizes.

Sixty-eight first grade and 140 second grade scholarships, the full number, were held in the year. The allotment, subject to divisional limits, rests with Divisional Commissioners. In Amherst the first grade scholarships of Rs. 10 were converted into second grade ones of Rs. 5 to secure payments to a larger number of students; but this unauthorized conversion is not permissible. In Moulmein and Mandalay, and at some other centres, scholarships were not always allotted to deserving cases. The amount paid in scholarships in the year was Rs. 15,100. A sum of Rs. 480 was allotted as prizes to the various schools, but this is to be discontinued as these awards appear to serve no useful purpose. The proportion of the sons of *thugyis* and agriculturists to traders and others was as 5 : 3, which is satisfactory.

(*c*) Cost of Survey Schools.

The total expenditure on the maintenance of the schools amounted to Rs. 39,932, as against an income from fees and other sources of Rs. 5,197; the net cost was therefore Rs. 34,735. This works out to a cost-rate of Rs. 91 per pupil, which is slightly less than last year, and by no means high for technical instruction.

(*d*) Results obtained at Syndicate examinations.

At the Syndicate Examination of April last the candidates from Government Schools who obtained passes in Surveying, Arithmetic and Revenue numbered respectively, 221, 104 and 208, or 60, 31 and 67 per cent. of the total number presented in each of these subjects. The results are good for Revenue, fair for Surveying, and decidedly poor for Arithmetic, to which more attention must be given. Proposals for raising the entrance test in Arithmetic and for revising the school time-table so as to ensure more thorough tuition in this subject are under consideration. The schools that did best in surveying are Minbu, Pakôkku and Sagaing; while Mergui passed none, and Toungoo, Katha and Mônywa very few indeed. The 'Clancey' medal for surveying was won by a student of the Ma-ubin School; this is the third occasion on which Ma-ubin has achieved this distinction. In Arithmetic, Moulmein and Minbu were the most successful; and Katha, Toungoo, Kyaukpyu, Mergui, Prome and Bassein the least. In Revenue, Minbu, Pakôkku and Sagaing did remarkably well. The schools that did not show up well, taken all round, are those of Mergui, Katha, Toungoo and Mônywa. Katha was unfortunate in having a teacher till towards the end of the session who totally neglected the school, and Mergui had an inexperienced teacher.

(*e*) Teaching Staff.

The teachers, as a class, have acquitted themselves well, more especially those of Bassein, Pakôkku, Minbu, Mandalay and Sagaing. The teacher at Pakôkku is a new man. He has yet to qualify by the VII Standard. The former teacher at Pakôkku died during the year. The teacher at Yamèthin was pensioned, and the Katha teacher was removed from his appointment for misconduct and general bad work extending over a lengthy period. The teachers at Pegu and Toungoo have become too old for this work and the teacher at Prome requires close supervision.

(*f*) Inspection of Survey Schools.

All the schools but Mergui were inspected either by one of the three Administrative officers of the Department. The school at Mergui was closed when that station was visited by the Commissioner of Settlements and Land Records. The condition of the schools at Katha, Toungoo, Pegu and Mônywa was unsatisfactory and closer supervision by the Superintendents is required at these places. The map work in Kyaukpyu, Minbu and Bassein was exceptionally good, but in Akyab, Pegu, Henzada, Toungoo and Sagaing it was poor. Field-work continues to be well practised. Generally speaking, the schools are in good order, though improvement in the near future is expected from Toungoo, Pegu, Mônywa, Katha and Mergui. The various schools were visited off and on by the local Superintendents of Land Records, though at the Katha, Moulmein and Pegu centres the visits were insufficient.

20. *Training of Apprentice Surveyors.*—Rules for the appointment and training of apprentice Surveyors are found in Chapter IIIA of the Land Records Manual. They prescribe that only men who have passed the Syndicate Examination in Surveying shall be appointed, and lay down the scale of apprentices

and the method of training and examination. More attention was paid to this scheme during the year. The annual test examinations were held at the prescribed time in most districts but in some, notably in Amherst, these orders were disregarded. The intention is that the best of the passed apprentices are to be retained as an unpaid reserve from which the permanent staff is to be recruited. The demand for qualified Surveyors is, however, so great that the passed apprentices get paid appointments at once, and there is no reserve in many districts. In fact, men often get appointments without going through the course of training as apprentices. In such cases the men are to be kept on probation and are not to be confirmed until they receive a certificate from the Superintendent that they possess the knowledge and qualifications expected from a passed apprentice.

21. *Qualifications and training of the paid Subordinate Staff.*—The Land Records Manual lays down that the Superintendent shall at the commencement of each season instruct his Inspectors and Surveyors in their duties, and shall explain any new rules and directions which may have issued during the year. Inspectors are also required to go over one *kwin* with each of their Surveyors. These rules were observed in many districts, but must in future be followed in all.

22. *Training of Assistant Superintendents.*—The rules for selection and training mentioned in last year's report issued during the year. A new register for the entry of qualified candidates was opened in the office of the Commissioner of Settlements and Land Records. The old register was closed and the names of 5 candidates fully qualified under the new rules, or who had been already nominated for appointments were transferred to the new register. Under Rule 6 two of these candidates who did not hold the higher qualification were examined in Mathematics in August 1908, but both failed to pass. Seventy-one applications for registration were received during the year, and of these 27 candidates were registered. Seven registered candidates who after being interviewed had been finally approved by the Commissioner of Settlements and Land Records were nominated for six vacancies in September 1908. The six accepted nominees were appointed and were sent to the Dehra Dun Survey School where they are now under training. The name of one applicant was removed and at the close of the year there were 25 candidates on the register.

(*a*) Selection and training of Probationer Assistant Superintendents.

A sound knowledge of Mathematics is an essential for a Land Records Officer and it was thought that the pass in Mathematics (including Algebra) required from candidates holding European High School pass certificates practically ensured this. It has, however, been ascertained that the branches of Mensuration, Trigonometry and Logarithms are not included in the ordinary Mathematical pass. When dealing with applications for registration, passes by these optional subjects are now considered.

(*b*) Mathematical qualifications of candidates.

In paragraph 25 (*c*) of this report, mention is made of the unfortunate losses of the department due to the death of four officers during the year, and to the consequent shortage of gazetted staff. Under the ordinary system of recruitment and training Probationers are not available for regular duty until two and a half years after appointment, and the relief obtained by the appointment of Probationers is thus long deferred. The condition of affairs justifies special measures, and in order to strengthen the working staff with greater rapidity, the Surveyor-General has been asked whether he can transfer four junior but trained officers to the department. These officers being qualified Surveyors, should be available for service after a few months training in Land Records work and rapid relief would thus be obtained.

(*c*) Proposals for special recruitment.

23. *Training of Junior Superintendents in Survey Work.*—It is admitted that the Junior Officers of the Department require further training in Survey work but it has not been decided how this training is to be given. It was at first thought that the Superintendents were to go through the same course as the newly appointed Probationers, but later proposals have been submitted for

giving them one season's training with a Survey of India Party. The matter is still under consideration.

24. *Training of Civil Officers in Survey and Land Records Work.*—The standing orders requiring that all Officers newly appointed to the Commission, the Provincial Civil Service, and the Subordinate Civil Service, should be trained in Land Records work and Surveying have been reproduced in Chapter IIID of the Land Records Manual. The Commissioner of Settlements and Land Records is asked to advise where this training should be given. During the monsoon months stations in the dry zone are usually suggested, and so far as possible stations where there are senior and well-qualified Superintendents are chosen. Ordinarily, however, the annual number of Officers trained in any one station should be limited to three, as the training of Officers is a not inconsiderable addition to the Superintendent's work. During the year of report 10 Assistant Commissioners, 2 Extra Assistant Commissioners and 28 Myoôks were put through the prescribed course and all passed the required tests.

CHAPTER V.

ADMINISTRATION AND GENERAL.

25. *Gazetted Staff.*—The administrative staff consists of a Commissioner who is also in charge of the Settlement Department, assisted by a Deputy Director and an Assistant Director of Land Records. The appointments of Commissioner and Deputy Director are held by members of the Commission, and the appointment of Assistant Director is provided on the cadre of the Superior Land Records service. No changes of personnel occurred during the twelve months under report. Mr. H. M. S. Mathews, Commissioner, Mr. W. E. Lowry, B. A., I.C.S., Deputy Director, and Mr. J. C. Clancey, Assistant Director, were at their posts throughout the year.

(*a*) Administrative Staff.

Besides one appointment of Assistant Director the cadre of the superior Land Records service, as reorganized in April 1908, provided for 39 Superintendents and six Assistant Superintendents. Thirty-four Superintendents were allowed for 32 district charges (including Rangoon Town District), for Mandalay Town Lands, and for the map section of the Government Press. In addition, five Superintendents were provided for leave vacancies, making 39 Superintendents' appointments in all. The calculation for leave is 14 per cent. on the number of appointments to be filled. Of the six Assistants, three should ordinarily be available to help the Superintendents in the heavier district charges, and the remaining three will probably be Probationers under training appointed to fill vacancies on the cadre caused by casualties. During the year of report an additional Superintendent's appointment, making 40 appointments in all, was added to the cadre as a second Superintendent was sanctioned for the large district of Hanthawaddy.

(*b*) Cadre of Superior Land Records service.

When the year opened the executive staff consisted of 40 Superintendents and two Assistant Superintendents, and there were thus three unfilled vacanices on the cadre of 39 Superintendents and 6 Assistants, but when the additional Superintendentship was created for Hanthawaddy the number of vacancies rose to four. One Superintendent retired in July 1908 and another died in October, and to fill the six vacances six Assistant Superintendents were appointed and joined the Dehra Dun training school in November. Three more deaths occurred during the year bringing the establishment down to three below full strength. These figures, however, are scarcely a measure of the actual shortage, for the reorganization scheme contemplated conditions under which only three officers were to be absent for training. At the end of the year there were actually six officers under training, so it may be said that the working staff of the service was six under strength.

(*c*) Permanent Staff filling appointments on the cadre of the Superior Land Records service.

(*d*) Leave and deputation of Officers of the superior Land Records service.

Long leave was granted to three officers during the year, and one officer already on leave received an extension. Ten officers received privilege leave, which in three cases was extended on medical certificate. Only two officers were on leave and one officer was on deputation to the Provincial Civil Service at the close of the year. Short leave is readily granted during the recess, provided there is no interference with the annual reports. Applications for short leave in the field season are discouraged, but long leave is granted when possible. In October 1908 the Local Government sanctioned an arrangement under which members of the Provincial or Subordinate Civil Services can be appointed to take the place of officers on leave or deputation until the Department can be brought up to its full strength. Had it not been for this arrangement, several officers to whom leave was due could not have got away. In the case of leave vacancies not exceeding one month's duration, the *Akunwun* ordinarily takes charge. For longer periods, however, this is not possible, and the vacancy has to be filled. A list of Land Records Inspectors with some knowledge of English, nominated by Deputy Commissioners, and believed fit to carry on work temporarily in Land Records district charges was prepared and submitted to the Financial Commissioner. When vacancies have to be filled, officers are selected from this list, and if the selection is approved, the nominee is appointed a temporary fourth grade Myoôk and is posted to the vacant charge. During the year six *Akunwuns* held temporary charge of Land Records offices in addition to their other duties. Two leave vacancies were filled by temporary Myoôks, and the vacancy caused by the Superintendent seconded for the Provincial Civil Service was filled by a permanent Myoôk who had Land Records experience.

(*e*) Transfers, postings and promotions of officers of the superior Land Records service.

Seven transfers took place during the year. In one case the Superintendent had been twelve years in his district, and in another case $3\frac{1}{2}$ years. In the remaining cases the officers had not been long in their charges, but the transfers were necessary in the interests of the Department. Four officers on return from leave went back to their original appointments, and seven others were posted to new districts. Owing to numerous casualties promotions made during the year were numerous.

26. *Subordinate establishment.*—During the year the establishments of district Surveyors and Surveyors employed on Supplementary Survey in towns were amalgamated with the regular Land Records staff. The field staff of Inspectors and Surveyors is shown in Statement I. At the close of the year there were 171 Inspectors and 1,650 Surveyors on the strength against 169 Inspectors and 1,618 Surveyors in June 1908. Under the head of Surveyors appear not only district, rural and urban surveyors, but also *taiksayès*. Two Inspectors and two Surveyors died, and six Inspectors and 19 Surveyors left the service for various reasons. Two Surveyors were dismissed, and 1 Inspector and 26 Surveyors were removed. Four Inspectors were reduced to Surveyors and 10 Surveyors to apprentices.

(*a*) Organization of Subordinate staff.

(*b*) Reorganization proposals.

The proposals for reorganization of the subordinate staff to which reference was made in paragraph 20 of last year's report have not yet been submitted. Progress with the scheme was not possible as various changes were under consideration. Besides the amalgamation scheme referred to above, further proposals, since vetoed, were put forward for absorbing record-keepers in the staff of Inspectors, and for transferring the clerical staff to the general establishment of the Deputy Commissioner's office. The proposals mentioned in paragraph 13(*b*) for attaching flying columns to the District Land Records staff in order to gradually bring revision survey up to date were also incomplete. The scheme of reorganization has now been taken up again and it is hoped that it will be ready before long.

(*c*) Appointments to the Subordinate Cvil Service.

Under the rules [reproduced in Chapter XID of the Land Records Manual] by which certain appointments in the Subordinate Civil Service are reserved for deserving members of the subordinate Land Records staff, Maung Galè, Inspector of Land Records,

Hanthawaddy, and Maung So Maung, Inspector of Land Records, Myingyan, were appointed officiating 4th grade Myoôks. Maung Ka, an Inspector who under the same rules had been appointed to the Subordinate Civil Service in 1906 was reverted for incompetency.

27. *Transfrontier Trade Registration.*—The year of report saw considerable development. The establishment was reorganized and the opening of several new offices should lead to greater accuracy of registration. The periodical statements were submitted with punctuality, and a report for the triennium 1906—1908 was issued in July 1908.

28. *Weekly Crop Reports.*—Crop Reports were received, tabulated and summarized weekly. Late receipt of the district reports causes considerable inconvenience. The reports of Pegu, Salween, Amherst, Sagaing and Kyauksè were frequently late. The reports are prescribed under Chapter I of the Famine Code and instructions for their preparation and submission have been embodied in Chapter XVIIA of the new Land Records Manual.

29. *Fortnightly Returns of Prices and half-yearly rates of wages.*—The returns of current prices (retail and wholesale) at the headquarters of districts are furnished by District officers on information usually obtained from the Superintendents of the principal markets. The returns give the quantities in seers and chittacks obtainable per rupee. As these measures are not used in the markets of Burma, the conversion of the market quotations has been a matter of some difficulty. Conversion tables which will simplify the calculations are now under issue. The commodities for which prices were formerly reported were wheat, arhar dhall (husked), rice (best sort), rice (common sort), gram (unhusked), maize, jowar (husked) and peas. During the year the following additional commodities were added ghi, chaff, bran, oats and kerosine oil (price per tin). Prices are not always carefully checked in the district office and attention has frequently to be drawn to errors and unexplained variations. In one case (Henzada) it was found that incorrect weights had been used for determining the quotations. The fortnightly wholesale rates should agree approximately with the wholesale prices for the same commodities quoted in the Weekly Crop Reports. The new conversion tables will facilitate this check. Rates of wages are furnished twice a year. Suggestions for improving the system of collecting wage statistics were made during the year by the Director-General of Commercial Intelligence. The suggestions were accepted and instructions for collecting and reporting prices and rates of wages were embodied in Chapter XVII, Parts B and C of the Land Records Manual.

30. *Crop Forecasts.*—Forecasts of the rice, cotton and ground-nut crops of 1908-09 were issued and so far as can be seen at present, they appear to have been fairly accurate. The provincial forecast is compiled as soon as possible after receipt of the district reports. Immediately after compilation a summary is telegraphed to India and is communicated to the local newspapers. At the same time a copy of the detailed forecast is posted on the notice board at the entrance to the Commissioner's office. The manuscript is sent to Press and struck off; the forecast is distributed to all firms and persons who are interested in the crop and who have applied for entry on the distribution list.

31. *Season and Crop Report.*—This Report for the year ending the 30th of June 1909 was submitted in July. It was due on the 1st of that month but was late. Endeavours will be made to secure its punctual submission this year. The reports of ten districts were not received till after due date. From Pakôkku, Northern Arakan, Kyaukpyu, Sandoway and Pegu, the reports were three weeks over due.

32. *Land Records Report.*—This Report for the year 1907-08 was due in the Financial Commissioner's office on the 20th August 1908, but was not submitted till the 8th October. The time has since been extended till the 10th of September and it is hoped that this report will be in by due date. Thirteen district reports were late in reaching this office. Of these the latest was Akyab, 18 days over due, Myaungmya and Pegu were a fortnight late.

33. *Land Records Manual.*—When writing last year's report in August 1908, the hope was expressed that the Land Records Manual would shortly be ready for publication. This hope was not fulfilled, for a preliminary issue to Land Records officers was not made till June 1909 and final publication has still to come. In October 1908 the proof of the Manual was submitted to a Conference presided over by the Financial Commissioner. Some amplification and amendment was required, and another Conference was held in April 1909. The outcome of the later Conference was further amendment, especially of the chapter relating to Supplementary Survey in towns, while consultation with local officers again indicated the necessity for alteration in numerous matters of detail in the text and for thorough revision of the forms with which the Manual deals. The Manual as modified is now so well advanced that its issue in the course of the next few months may be anticipated with some confidence.

34. *Survey Manual.*—No important changes of procedure were made, but a number of minor amendments were inserted in the Manual.

35. *Famine Code.*—During the year amendments were made in the Famine Code with the object of making its provisions more suitable to Burma where scarcity, if it does occur, is not likely to be widespread. Under "Standing Preparations," provisions have been inserted for dispensing with detailed estimates of works in districts where liability to famine is remote. The orders requiring the up-keep of work programmes providing employment for certain percentages of the total population have also been modified. On Public Works programmes the percentage is reduced from 15 per cent. to 10, and on the Village programmes from $7\frac{1}{2}$ per cent. to 5 per cent. The list of 21 districts declared liable to scarcity now shows 20 districts—Myitkyina having been removed as experience has shown it to be safe. Revised analyses were prepared for the districts of Mergui, Ruby Mines and Shwebo. A note was circulated to Deputy Commissioners asking them to reconsider their estimates of relief requirements as they appeared to be excessive. The result of reconsideration was a reduction in the provincial estimate from 225 million units to 45 million units. The latter figure is the equivalent of 248,000 persons for six months which should be ample. The works provided on the district programmes are ordinarily sufficient except in Myingyan, where larger provision should be made this year. Although the occurrence of famine cannot be said to be probable in any district of Burma, it seems desirable, under section 20 of the Code, that the provision in the programmes under Sanctioned Public Works should be increased in the dry zone districts. At present the provision for the Province under Sanctioned Public Works estimates is only 2 per cent. of the total population in the districts declared liable to scarcity. Guard-book forms prescribed by the Famine Code were drawn up but were not ready for issue at the close of the year of report.

36. *Services of Officers.*—Mr. W. E. Lowry, Deputy Director, besides doing much useful inspection and other duties, was engaged during the year on the Land Records Manual. The Manual could not have been in better hands, and its issue should herald a great advance in systematizing Land Records procedure, while it will be a permanent record of Mr. Lowry's excellent work in the appointment which he is now vacating. Mr. J. C. Clancey, Assistant Director, did valuable work for the department, especially in connection with Surveys, and as usual he was most helpful in the office. Mr. R. A. Gibson, Senior Superintendent of Land Records, was employed on special duty in connection with a scheme, already mentioned in this report, for dealing with revision surveys. Mr. Gibson completed his enquiry and submitted his report at the close of the year. The enquiry was carefully done and the report is clear and satisfactory. Although Mr. Gibson did not retire on a well-earned pension till a few days after the close of the year, this opportunity is taken to express regret for Mr. Gibson's departure. Mr. Gibson, after previous service in the Survey of India, did excellent work in the Land Records Department which he joined in 1888. An appreciation of Mr. Gibson's valuable services in the Settlement Department was contained in last year's Revenue Administration Report. Mr. Haddock in Hanthawaddy did yeoman's service during the year in getting that difficult district into order. He and his staff also rendered valuable

assistance to the Settlement Party in connection with crop selection and measurements. Special praise is also due to Mr. Baker for his special work in oil-field surveys in Magwe, and to Maung Pe Maung for his successful survey operations in the Amherst, Thatôn and Yamèthin Districts and in the town of Moulmein.

Amongst the members of the subordinate staff the following Inspectors are specially singled out for praise by Deputy Commissioners :—

Maung Shwe Tun (Akyab), Maung Saing (Prome), Maung Mi Aung and Maung Po Kyin (Pyapôn), Maung Shwe Hman (Henzada), Maung Gyi (Amherst), and Maung E (Shwebo).

CAMP MOULMEIN:
The 22nd August 1909.

H. M. S. MATHEWS,
Commissioner of Settlements and Land Records, Burma.

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STATEMENT NO. I.—*Area under Supplementary*

District.	Total area.				Total assessment (including cess in Lower Burma) on the area in column 5.
	Total in	Under occupation.	Under cultivation.	Under assessment.	
1	2	3	4	5	6
	Sq. Miles.	Acres.	Acres.	Acres.	Rs.
Akyab	1,977	659,224	578,016	656,107	18,34,021
Kyaukpyu	814	169,217	162,007	163,715	2,88,172
Sandoway	268	55,642	53,229	54,343	1,04,975
Hanthawaddy	2,673	1,221,751	1,174,125	1,221,022	40,53,558
Pegu	2,382	897,705	861,387	897,447	23,43,892
Tharrawaddy	1,231	487,937	464,192	487,857	12,74,235
Prome	1,723	358,188	342,041	358,028	6,16,700
Ma-ubin	1,648	446,234	415,434	446,173	14,27,604
Pyapôn	1,290	614,805	591,138	612,370	20,01,224
Bassein	2,222	678,561	618,262	676,959	16,51,820
Henzada	1,809	554,531	529,732	553,808	14,69,012
Myaungmya	1,820	630,027	572,837	627,344	19,32,116
Toungoo	1,496	401,300	376,768	377,324	8,58,742
Thatôn	2,366	702,566	675,728	699,119	13,26,194
Amherst	1,468	441,514	413,154	435,407	9,21,314
Tavoy	469	120,930	113,673	118,568	3,13,027
Mergui	590	90,426	81,614	88,891	2,64,321
Thayetmyo	577	100,504	82,508	99,767	1,37,722
Pakôkku	77	*49,365*	*46,182*	*46,182*	*1,14,450*
Minbu	1,418	433,453	234,058	214,228	4,01,615
Magwe	2,865	938,293	446,068	409,244	4,70,917
Mandalay	700	247,926	176,558	166,350	8,13,148
Katha	1,080	204,417	183,898	179,789	2,30,594
Shwebo	3,680	998,594	552,172	357,115	8,50,618
Sagaing	1,826	734,110	466,181	411,989	4,46,156
Lower Chindwin	2,570	757,158	519,614	471,465	3,23,956
Upper Chindwin	104	38,438	29,713	29,508	35,980
Kyauksè	567	253,541	179,207	158,829	8,20,868
Meiktila	1,616	636,936	393,596	289,957	3,78,636
Yamèthin	1,776	465,664	318,054	257,404	4,47,046
Myingyan	3,027	1,179,165	664,945	559,562	4,28,830
Total for 1908-09 ...	48,052	15,518,757	12,269,909	12,079,689	2,84,67,013
Total for 1907-08 ...	47,542 *	15,167,128*	11,596,433	10,707,187	2,62,20,575

* Revised

Note.—1. The towns of Rangoon and
2. Figures against Pakôkku

Survey and cost of same (Paragraph 9).

Number of Inspectors.	Number of Surveyors.	Total Cost.							Remarks.
		Per square mile (column 2).			Per acre of the area in column 3.	Per cent. of the assessment in column 6.	Of Superintendence and inspection.	Of the Survey Staff.	
		Of Superintendence and inspection.	Of Survey Staff.	Of combined total.					
7	8	9	10	11	12	13	14	15	16
		Rs.	Rs.	Rs.	Ans.	Rs.	Rs.	Rs.	
7	88	9·96	22·24	32·20	1·545	3·47	19,695	43,974	
4	32	18·93	13·77	32·70	2·517	9·24	15,405	11,212	
3	13	47·06	22·17	69·23	5·335	17·67	12,611	5,942	
9	114	11·89	23·54	35·43	1·240	2·34	31,776	62,921	
9	75	10·03	17·56	27·59	1·171	2·80	23,890	41,827	
5	49	12·85	21·68	34·53	1·394	3·14	15,821	26,689	
5	54	9·88	16·64	26·52	2·041	7·41	17,023	28,669	
5	51	9·71	16·18	25·89	1·530	2·99	16,004	26,661	
6	65	12·50	26·71	39·21	1·317	2·53	16,131	34,459	
8	72	8 99	17·10	26·09	1·368	3·51	19,993	38,009	
6	67	8·38	20·34	28·72	1·499	3·54	15,167	36,796	
6	63	10·39	18·10	28·49	1·317	2·68	18,902	32,947	
5	41	10·04	13·78	23·83	1·421	4·15	15,025	20,620	
6	73	6·96	16·29	23·25	1·253	4·15	16,475	38,531	
5	45	11·43	15·00	26·43	1·406	4·21	16,773	22,023	
3	†24	18·19	23·71	41·90	2·600	6·28	8,532	11,117	† Includes one *Thugyi* who is a Surveyor.
3	21	17·49	16·55	34·04	3·554	7·60	10,320	9,767	
2	20	18·47	19·23	37·70	3·463	15·80	10,658	11,097	
4	*30*	*44·03*	*46·75*	*90·78*	*2·266*	*6·11*	*3,390*	*3,600*	
5	46	9·15	13·46	22·61	1·183	7·98	12,979	19,082	
8	75	6·95	9·61	16·57	0·809	10·08	19,921	27,538	
5	50	26·63	32·83	59·46	2·686	5·12	18,640	22,980	
5	38	13·91	17·59	31·50	2·662	14·75	15,018	18,998	
12	116	7·32	12·21	19·53	1·152	8·45	26,921	44,949	
8	69	11·04	16·73	27·77	1·105	11·36	20,151	30,547	
6	56	6·47	8·92	15·39	0·836	12·21	16,633	22,920	
1	8	68·78	43·11	111·88	4·844	32·34	7,153	4,483	
6	45	27·97	34·41	62·38	2·232	4·31	15,859	19,511	
5	54	11·68	13·72	25·40	1·031	10·84	18,871	22,173	
5	52	9·70	11·74	21·44	1·308	8·52	17,230	20,844	
8	74	5·63	9·41	15·04	0·618	10·61	17,035	28,480	
171	1,650	10·54	16·35	26·80	1·332	4·54	5,06,612	7,85,766	
169	1,618	9·61	16·23	25·84	1·296*	4·68	4,56,806	7,71,414	

figures.
Mandalay have been excluded from this Statement.
are not included in the totals.

STATEMENT NO. II.—*Revision Surveys*

TRACT.		TRAVERSE (FIELD).						CADASTRAL				
						Mathematical results.		*Staff.*				*Kw*
District.	Township.	Sub-surveyors.	Period.	*Kwins.*	Area.	Average angular error per station.	Average lineal error per 10 chains.	Inspectors.	Field Surveyors.	Draughtsmen and Computors.	Period.	Whole.
1	2	3	4	5	6	7	8	9	10	11	12	13
		No.	Months.	No.	Sq. mls.	Secs. decs.	Links. decs.	No.	No.	No.	Months.	No.
Akyab ...	2	1	6	6	5·00	6·00	0·19	1	5	...	6	3
Hanthawaddy ...	...	2	6	24	45·66	2·00	0·30	2	12	4	6	73
Thatôn ...	2	} (*b*) 8	6	52	211·00	2·38	0·37	} (*b*) 7	(*b*) 42	(*b*) 14	6	111
Amherst ...	4			138	276·00	2·37	0·37					182
Magwe (*d*) ...	...	...	...	...	...	...	...	...	2	...	6	2
Mandalay ...	3	2	9	102	93·59	4·94	0·49	2	20	10	7	102
Meiktila ...	...	...	...	...	...	...	...	2	10	10	4	56
Yamèthin ...	2	2	6	108	135·00	7·79	0·62	2	12	6	6	101
Total for 1908-09	13	15	6—9	430	766·25	2·00—7·79	0·19—0·62	16	103	44	4—7	630

STATEMENT NO. III.—*Extension Surveys*

TRACT.		TRAVERSE (FIELD).							CADASTRAL			
							Mathematical results.		*Staff.*			
District.	Township.	Sub-surveyors.	Period.	*Kwins.*	Area.	Azimuths observed.	Average angular error per station.	Average lineal error per 10 chains.	Inspectors.	Field Surveyors.	Draughtsmen and Computors.	Period.
1	2	3	4	5	6	7	8	9	10	11	12	13
		No.	Months.	No.	Sq. mls.	No.	Secs. decs.	Links. decs.	No.	No.	No.	Months.
Akyab ...	5	2	6	55	66·44	32	1·02	0·90	1	6	2	6
Sandoway ...	3	2	3	17	6·96	2	0·08	0·58	...	...	...	...
Tharrawaddy ...	...	1	6	10	26·08	..	1·08	0·02	...	2	1	6
Thatôn ...	2	} (*b*) 8	6	13	13·00	9	0·19	0·28	} (*b*) 7	(*b*) 42	(*b*) 14	6
Amherst ...	4			101	189·00	32	2·33	0·31				
Total for 1908-09	14	13	3—6	196	301·48	75	0·08—2·33	0·02—0·90	8	50	17	6

by Special Staff (Paragraph 4).

(Field).								Cadastral (Recess).		Cost (Field and Recess).			
ins.	*Area.*		*Fields.*		*Kwins* holding-marked.	*Kwins partalled.*		Inspectors, Draughtsmen, Computors, etc.	Period.	Total.	Per square mile gross.	Per occupied acre.	Remarks.
Part.	Gross.	Occupied.	No.	Average size.		By Superintendent.	By Inspectors.						
14	15	16	17	18	19	20	21	22	23	24	25	26	27
No.	Sq. mls.	Acres.		Acres.	No.	No.	No.	No.	Mths.	Rs.	Rs. A.	As. P.	
13	29·00	16,976	45,000	0·38	...	6	16	7	6	5,128	176 13	4 10	
1	110·26	66,732	108,133	0·62	67	15	74	13	6	15,989	145 0	3 10	
...	211·00	41,777	66,486	0·63	107	10	96	(*b*) 57	6	(*a*)38,935	79 15	5 0	(*a*) Exclusive of cost of Extension Surveys.
10	276·00	82,027	199,437	0·41	191	41	175						(*b*) Employed also on Extension Surveys.
...	0·70	450	...	...	...	2	2	2		(*c*) 1,944			(*c*) Exclusive of Rs. 2,569, cost of demarcation.
...	93·59	49,405	113,622	0·43	...	102	102	...	...	12,913	138 0	4 2	(*d*) Topographical survey of Twingôn and Bemè Oil Reserves.
32	(*e*)77·00	(*e*)36,992	...	...	...	9	88	9	4	5,992	77 13	2 7	(*e*) 13 square miles and 8,320 acres only mapped.
7	135·00	56,059	116,761	0·48	108	48	101	16	6	15,480	114 11	4	
63	932·55	350,418	649,439	0·54	473	233	654	104	4—6	96,381	103 6	4 5	

by Special Staff (Paragraph 5).

(Field).								Cadastral (Recess).		Cost (field and recess).			
Kwins.	*Area.*		*Fields.*		*Kwins* holding-marked.	*Kwins partalled.*		Inspectors, Draughtsmen, Computors, etc.	Period.	Total.	Per square mile, gross.	Per occupied acre.	Remarks.
	Gross.	Occupied.	No.	Average size.		By Superintendent.	By Inspectors.						
14	15		17	18	19	20	21	22	23	24	25	26	27
No.	Sq. mls.	Acres.		Acres.	No.	No.	No.	No.	Months.	Rs.	Rs. A.	As. P.	
46	37·56	11,327	33,993	0·33	46	...	34	11	5	9,616	256 0	13 7	
...	...	...	...	...	...	...	...	...	...	400	57 8	...	Cadastral survey done by local staff.
8	25·15	4,378	11,739	0·37	8	6	8	4	3	4,142	164 11	15 2	
20	23·00	5,670	12,587	0·45	20	...	20	(*b*) 57	6	(*a*) 22,786	79 15	6 3	(*a*) Exclusive of cost of Revision Surveys.
159	262·00	52,759	79,077	0·67	155	25	155						(*b*) Employed also on Revision Surveys, *vide* Statement II.
233	347·71	74,134	137,396	0·54	229	31	217	72	3—6	36,944	106 4	8 0	

STATEMENT NO. IV.—*Demarcation and Survey of*

District.	DEMARCATION.					SUR							
						TRAVERSE (FIELD).				CADASTRAL			
	Demarcation Officers.	Period.	Towns.	Area.	Cost.	Sub-Surveyors.	Period.	Towns.	Area.	Inspectors.	Field Surveyors.	Draughtsmen and Computors.	Period.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
	No.	Mns.	No.	Sq. mls.	Rs.	No.	Mns.	No.	Sq. mls.	No.	No.	No.	Mns.
Pegu	1	3	1	0·52	567	1	1	1	0·52	1	4	4	3
Amherst	5	2—12	1	2·17	6,822	2	6	1	9·20	1	5	2	6
Pakôkku	...	...	...	...	...	...	...	...	...	...	...	5	4
Magwe	1	6	2	2·82	304*	...	...	..	...	...	...	...	...
Mandalay	...	...	1	0·50	128	...	...	...	...	...	2	...	5
Total for 1908-09 ...	7	2—12	5	6·01	7,821	3	1—6	2	9·72	2	11	11	3—6

STATEMENT NO. V.—*Demarcation and Survey of*

TRACT.		DEMARCATION.							
District.	Township.	Demarcation Officers.	Period.	Fisheries.	Area.	Cost.	STAFF.		
							Inspectors.	Surveyors.	Draughtsmen and Clerks.
1	2	3	4	5	6	7	8	9	10
		No.	Months.	No.	Acres.	Rs.	No.	No.	No.
Hanthawaddy ...	3	1	5	90	5,000	1,519	1	8	...
Pegu ...	6	1	2	351	5,200	662	...	2	1
Total for 1908-09 ...	9	2	2—5	441	10,200	2,181	1	10	1

Town Lands by Special Staff (Paragraph 6).

VEY.					
(FIELD).		RECESS.		Cost (Field and Recess).	Remarks.
Towns.	Area.	Inspectors, Draughtsmen, and Computors.	Period.		
15	16	17	18	19	20
No.	Sq. mls.	No.	Mns.	Rs.	
1	0·52	5	3	2,402	Relates to Dabein Town. Survey of 18 towns done in previous years. Rolls completed.
1	6·21	10	6	10,219	Tabulated figures for Moulmein Town only. Traverse completed; demarcation and detail survey of about two-thirds done, balance to be finished next season. Two towns previously surveyed. Town land rolls not yet taken in hand for Moulmein, but completed for one town and in hand for another.
1	3·61	5	6	2,800	Tabulated figures for Pakôkku Town. Traverse survey previously done. Detail survey completely revised. Rolls completed for residential area.
...	...	...	...	...	* Excludes cost of demarcation pipes. Two towns surveyed before. Demarcation proceedings in hand. Rolls completed.
1	0·50	2	3	1,264	Refers to extension of Block area, with proportionate reduction of residential area of Maymyo town. Survey previously done. Rolls completed.
4	10·84	22	3—6	16,685	

Fisheries by Special Staff (Paragraph 7).

SURVEY (FIELD).						SURVEY (RECESS).		Cost (Field and Reces	Remarks.
Period.	FISHERIES SURVEYED.			FISHERIES INSPECTED.		Inspectors, Draughtsmen and Clerks.	Period.		
	Whole.	Subdivisions.	Area.	By Superintendent.	By Inspectors.				
	12	13	14	15	16	17	18	19	20
Months.	No.	No.	Acres.	No.	No.	No.	Months.	Rs.	
6	96	210	11,782	16	108	3	6	8,522	
6	54	297	5,200	351	...	1	2	3,169	
6	150	507	16,982	367	108	4	2—6	11,691	

STATEMENT NO. VI.—*Patta Surveys by*

TRACT.			SPECIAL PATTA MYOÔKS.									
				GRANT CASES.					STAFF.		
District.	Township.	No.	Period.	For disposal.		Disposed of.		Cost.	Inspectors.	Surveyors.	Period.
				No.	Area.	No.	Area.				
1	2	3	4	5	6	7	8	9	10	11	12
			Months.		Acres.		Acres.	Rs.	No.	No.	Months.
Akyab	9	...	...	...	...	...	...	...	...	5	8
Kyaukpyu ...	...	...	...	...	...	...	...	...	...	5	12
Sandoway ...	...	...	...	...	...	...	...	...	...	3	12
Pyapôn	4	1	4	834	13,404	414	2,892	1,152	1	4	6
Bassein	...	...	...	...	...	...	...	...	...	10	9
Henzada ...	...	...	...	...	...	...	...	...	...	6	6
Myaungmya ...	...	...	...	...	...	...	...	...	2	7	7
Toungoo	7	2	6	1,411	10,819	1,002	3,907	4,067	2	7	6
Thatôn	5	..	...	...	...	...	...	...	...	4	5
Amherst	5	1	5	1,521	13,581	779	5,253	330	3	13	6
Tavoy	...	...	...	...	...	...	...	...	...	3	7
Mergui	5	...	...	...	...	...	...	...	...	2	4
Thayetmyo ...	4	...	...	...	...	...	...	...	...	2	3
Minbu §	1	1	4	323	1,942	202	1,304	507	1	4	5—7
Mandlay § ...	...	...	...	...	...	...	...	...	...	...	...
Total for 1908-09 ...	40	5	4—6	4,089	39,746	2,397	13,356	6,056	9	75	3—12

Special Staff (Paragraph 8.)

SURVEY.								PLOTS CHECKED.				Remarks.
PATTAS.				FEES.		COST.		BY SUPERINTENDENT.		BY INSPECTORS.		
For Survey.		Surveyed.										
No.	Area.	No.	Area.	Rate per acre.	Amount realized.	Contract system.	Regular pay.	No.	Area.	No.	Area.	
13	14	15	16	17	18	19	20	21	22	23	24	25
	Acres.		Acres.	A. P.	Rs.	Rs.	Rs.		Acres.		Acres.	
770†	6,055	759	5,817	8 0	3,543*	2,909	...	...	...	17	124	† Pending for survey 11 cases. * Includes for areas surveyed by local staff.
1,264†	9,652	905	4,302	8 0	4,826	2,151	...	...	...	...	...	† Pending for survey 359 cases.
125†	742	63	582	8 0	516	350	...	...	...	...	...	† Pending for survey 29 cases, and for enquiry 33 cases.
476†	6,716	299	5,023	8 0	1,278*	...	2,880	14	218	299	5,023	† Pending for survey 22 cases; rejected 153 cases. * Exclusive of fees realized in the previous year.
284	2,888	284	2,888	8 0	2,321	1,014	...	...	...	209	1,904	
282	5,087	282	5,087	8 0	1,549	2,544	...	10	97	282	5,161	
558	7,860	478	6,624	8 0	3,925	3,312	...	10	150	478	6,624	
1,192†	10,552	967	10,112	8 0	5,276	...	3,537	29	278	937	8,721	† Pending for survey 225 cases.
116	4,377	74	2,287	8 0	2,202	516	...	...	...	74	2,287	
1,461†	13,582	1,139	10,207	8 0	3,285	2,400	3,936	...	...	1,104	10,442	† Pending for survey 322 cases.
344	917	344	917	8 0	459	459	...	8	32	80	320	
195	350	116	310	8 0	704	...	493	3	...	49	120	
63	262	63	170	8 0	131	64	...	...	...	...	...	
94‡	29,733	26‡	8,224	8 0	1,612	...	6,062	65	488	340	2,086	§ Survey of waste lands for issue of leases for cultivation in Môn Canal area.
97†	956	72	694	8 0	889*	227	...	...	...	...	...	§ Survey of agricultural leases. ‡*Kwins*. † Pending for survey 25 cases. * Includes for areas surveyed by local staff.
7,321	99,729	5,871	63,244	8 0	32,516	15,946	16,908	139	1,263	3,869	42,812	

STATEMENT NO. VII.—*Maintenance of Survey by Local Staff*

TRACT.		RE-SURVEY AND EXTENSION SURVEYS.						PATTA SURVEYS.				ANNUAL RE-SURVEY OF IMPERMANENT ISLAND CULTIVATION.		
		Re-surveyed.		*Extensions surveyed.*		*Kwins inspected.*		*Surveyed.*		*Inspected.*			Area Surveyed.	
District.	Township.	Gross.	Occupied.	Gross.	Occupied.	By Superintendent.	By Inspectors.	No.	Area.	By Superintendent.	By Inspectors.	Temporary Surveyors.	Gross.	Occupied.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		Sq. mls.	Acres.	Sq. mls.	Acres.	No.	No.		Acres.	No.	No.	No.	Acres.	Acres.
Akyab ...	9	56·26	32,890	3·93	2,512	18	23	73	340	...	16	...	...	...
Kyaukpyu ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sandoway ...	3	...	...	4·50	1,800	4	12	...	...	...	...	...	...	...
Hanthawaddy ...	...	64·02	40,969	16·45	10,525	..	180	...	...	...	...	...	...	...
Pegu ...	6	47·18	30,196*	17·46	11,172	11	36	...	...	...	...	...	...	...
Tharrawaddy ...	...	5·80	3,711	5·48	3,504	...	...	...	...	...	...	...	...	...
Prome ...	...	3·35	1,779	3·26	2,086	7	36	...	...	...	...	...	...	...
Ma-ubin ...	...	12·01	7,684	4·99	3,191	...	...	4	31	...	...	...	...	...
Pyapôn ...	...	..	...	9·21	5,896	19	65	6	68	14	6	...	...	...
Bassein ...	...	14·97	4,326	...	...	...	11	31	332	...	18	...	...	...
Henzada ...	6	59·57	35,035	...	...	10	14	14	85	3	11	...	...	...
Myaungmya ...	...	46·15	20,440	...	...	...	28	...	...	...	...	...	...	...
Toungoo ...	7	18 86	12,070	17·65	11,300	13	274	...	...	...	...	...	...	...
Thatôn ...	6	29·40	16,821	10·29	6,591	...	52	6	27	...	6	...	...	...
Amherst ...	...	51·00	15,082	...	...	6	54	287	3,822	32	17	...	...	...
Tavoy ...	...	1·54	986	0·07	40	...	...	23	271	1	8	...	...	...
Mergui ...	5	68·00	1,292	0·50	313	1	4	54	152	...	29	...	...	...
Thayetmyo ...	4	...	...	...	...	...	...	...	..	...	...	..	..	...
Pakôkku ...	...	...	...	...	...	...	...	...	...	...	...	30	49,365	49,365
Minbu ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Magwe ...	...	12·00	7,680	13·10	8,386	...	25	...	...	...	...	5	3,464	3,464
Mandalay ...	5	4·73	1,857	...	...	...	2	58*	324	...	130	3	3,605	3,605
Katha ...	2	...	...	4·65	*2,978	3	...	...	...	...	...	...	...	...
Shwebo ...	...	38·19	20,301	...	...	...	31	...	...	...	...	4	5,686	5,686
Sagaing ...	6	7·49	3,818	12·25	7,841	59	...	...	...	...	...	10	26,816	13,434
Lower Chindwin	...	...	...	...	...	...	...	...	...	...	...	2	5,109	3,228
Upper Chindwin	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kyauksè ...	6	3·73	2,387	14·00	74	...	...	...	...	...	...	...	...	...
Meiktila ...	...	7·13	4,565	...	...	...	...	...	...	..	...	...	...	...
Yamèthin ...	...	17·58	6,992	3·66	2,342	9	22	...	...	...	...	...	...	...
Myingyan ...	...	...	...	...	...	...	...	...	...	...	...	10	17,878	14,531
Total ...	65	568·96	270,881	141·45	80,551	160	869	556	5,452	50	241	64	111,923	93,313

† Sanction for the gradual survey of these areas by

and area for future Revision Survey (Paragraphs 12 and 13).

KWINS REQUIRING RE-SURVEY.												Remarks.
By Local Staff.						By Special Staff.						
Wholly.			*In part.*			*Wholly.*			*In part.*			
No.	Area.		No.	Area.		No.	Area.		No.	Area.		
	Gross.	Occupied.		Gross.	Occupied.		Gross.	Occupied.		Gross.	Occupied.	
16	17	18	19	20	21	22	23	24	25	26	27	28
	Acres.	Acres.		Acres.	Acres.		Acres.	Acres.		Acres.	Acres.	
...	...	...	23	21,063	3,661	13*	16,955	10,598	112*	192,200	63,117	* In process of survey.
...	...	...	...	...	...	17*	20,020	5,572	3*	4,963	683	* Sanction for survey received.
4	1,250	1,250	17	2,844	2,844	...	..	...	...	...	...	
65	51,152	51,152	.	...	...	129*	102,333	102,333	...	...	...	* In process of survey.
						194†	154,355	154,355				
32	15,290	13,070	125	44,535	44,535	150†	100,000	100,000	..	...	...	* Inclusive of 8,463 acres of village sites, etc.
...	...	...	...	...	...	114	139,262	...	...	...	...	
21	21,024	11,643	25	19,270	5,566	2	3,130	1,602	...	...	...	
70	73,830	73,830	...	...	...	120†	128,772	128,772	...	...	...	
150	115,760	115,760	...	...	...	193†	182,790	182,790	...	...	...	
10	11,714	4,750	30	38,103	22,979	...	...	...	...	...	...	
30	49,060	49,060	...	...	...	98†	135,260	135,260	...	...	...	
135	73,692	64,467	160	57,249	51,678	213†	229,750	178,990	...	...	...	
...	...	...	277	418,796	48,458	231†	335,905	187,200	...	...	...	
50	38,440	19,528	160	61,020	61,020	91†	136,537	70,521	...	...	...	
62*	56,423	18,167	58	14,196	11,054	158†	72,000	72,000	...	...	...	* Includes six *kwins* containing a gross area of 9,668 acres and 3,892 acres under occupation left over from the programme of the Special Survey Party.
12	1,965	1,965	14	1,587	1,587		...	...	...	...	...	
..	...	.	8	1,592	531	25*	21,361	7,090	..	...	...	* Sanction for survey applied for.
13	2,566	2,566	105	4,999	4,999	...	...	...	...	...	...	
...	...	...	...	..	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	...		...	..	
28	13,366	9,500	...	...	...	...	...	...	...	...	...	* Leases for cultivation.
...	...	...	...	...	...	...	...	...	...	...	...	* Includes 1,758 acres surveyed in the Mohnyin valley outside of the Supplementary Survey Tracts.
8	4,000	3,700	204	25,397	24,346	13	6,250	6,250	7	1,600	1,600	
...	...	...	...	..	...	17	14,752	8,109	10	11,674	4,710	
...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	49	24,984	18,415	59	16,360	14,990	
...	...	...	...	...	..	...	...	...	..	...	...	
113	62,412	4,840	653	318,326	134,782	160	97,956	47,291	54	34,819	17,798	
...	...	...	...	...	...	...	...	...	...	...	...	
803	591,944	445,248	1,799	1,028,977	418,040	1,987	1,922,372	1,417,148	245	261,616	102,898	

small permanent establishments has been applied for.

STATEMENT No. VIII.—*Supplementary*

District.	Towns surveyed on large scale.	Scale of survey.	Towns under Supplementary Survey.		
			Number of Towns.	Total area.	Occupied area.
1	2	3	4	5	6
				Sq. miles.	Acres.
Akyab	1	64″	1	5·23	...
Kyaukpyu	1	64″	1	1·22	...
Sandoway	1	64″	...	...	...
Rangoon Town	1	50′ 100′ 64″	1	28·03	...
Hanthawaddy	10	64″	...	...	...
Pegu	19	64″	1	4·29	...
Tharrawaddy	12	64″	...	...	...
Prome	7	64″	7	13·53	...
Ma-ubin	5	64″	5	6·92	...
Pyapôn	4	64″	4	6·47	...
Bassein	6	64″ 16″	1	12·63	...
Henzada	10	64″	10	16·50	...
Myaungmya	6	64″	...	...	...
Toungoo	10	64″	6	6·52	...
Thatôn	4	16″ 32″ 64″	4	8·50	...
Amherst	3	64″ 16″ 50′ 100′	1	2·08	...
Tavoy	1	64″	1	4·47	...
Mergui	2	64″ 16″ 33″	1	2·31	...
Thayetmyo	2	64″	...	...	...
Pakôkku	1	64″	1	3·61	...
Minbu	4	64″	4	3·29	...
Magwe	3	64″	3	3·82	...
Mandalay	1	16″ 64″	1	6·63	...
Mandalay Town	1	40′	1	19·03	...
Katha	3	64″	3	1·47	...
Shwebo	16	64″	16	4·39	...
Sagaing	3	64″	3	3·05	...
Lower Chindwin	2	64″	...	...	...
Upper Chindwin	...	...	...	...	...
Kyauksè	...	...	...	...	...
Meiktila	4	40′ 80′	4	4·78	...
Yamèthin	...	...	...	...	...
Myingyan	2	64″	...	4·40	...
Total ...	145	...	80	173·17	(*a*)...

(*a*) Figures in column 6 for the occupied area

(*b*) Excludes one Surveyor entertained from

Survey in Towns (Paragraph 14).

Permanent survey marks.	Staff.			Inspections		Remarks.
	Inspectors.	Surveyors.	Draughtsmen and Computors, etc.	By Superintendent.	By Inspectors.	
7	8	9	10	11	12	13
No.	No.	No.	No.			
107	...	2	...	..	..	Supplementary survey in progress, though final demarcation not yet undertaken pending Government orders.
48	...	1	...	1	1	
...	...	...	...	...	...	Survey completed. Supplementary survey not begun for want of new forms, but will be commenced next year.
5,006	1	7	2	1	1	
...	...	2	...	...	...	Town land rolls to be commenced by Township Officers shortly; Supplementary survey not yet begun.
1,028	1	5	1	...	...	Supplementary survey in progress in Pegu town; will be begun in rest next year, in which town lands rolls just completed.
546	...	3	...	...	...	Tenure enquiry just completed. Supplementary survey will commence next year.
1,048	...	4	...	4	7	
595	...	2	...	...	...	
413	...	2	...	4	4	
104	1	5	1	...	...	Tabular figures for Bassein town only. Supplementary survey not yet started in smaller towns.
1,659	...	4	...	9	...	Town Lands Rolls not yet completed in one town.
391	...	2	...	1	1	Rolls just completed; Supplementary survey will be begun next year.
3,410	...	3	...	...	6	Supplementary survey now in progress in six towns; in other four will be begun next year; rolls of one town still in hand.
834	...	6(*b*)	...	4	4	
207	1	1	...	1	...	Supplementary survey in progress in one town only. Town lands rolls of other towns not yet ready.
180	...	2	...	1	1	
171	...	1	...	2	1	
...	...	...	...	...	...	Supplementary survey not yet commenced as rolls not ready.
820	...	1	...	1	...	
283	...	2	...	2	4	
158	...	1	...	...	...	
142	...	2	...	1	...	
1,228	2	13	8	...	...	
130	...	1	...	3	...	
120	...	1	...	1	...	Maps kept up though rolls not yet ready.
248	...	1	...	2	3	Supplementary survey now in progress.
...	...	...	...	...	...	Supplementary survey not yet started, as rolls of one town just completed and of one in hand.
...	...	...	...	...	...	Supplementary survey not in operation, as plane-table survey of the four surveyed towns unsatisfactory.
...	...	...	...	...	...	Supplementary survey not undertaken, as it is proposed to survey professionally the five towns previously only plane-tabled.
5,000	...	1	...	...	...	Maps kept up, but professional survey of all four towns, previously surveyed on various scales, intended.
...	...	...	...	...	...	Proposed to re-survey four towns on professional lines.
...	...	...	...	...	...	Survey previously done and rolls now completed. Supplementary survey to begin shortly.
23,875	6	75	12	38	33	

under Supplementary survey are not available.

1st March 1909 for work in Thatôn town.

STATEMENT NO. IX.—*Supplementary Survey*

District.	Total number of *kwins* in tract.	NUMBER OF *KWINS* IN WHICH BY LAND RECORDS STAFF.				
		Superintendent.	*Inspectors.*			Total.
			Number of Inspectors.	Number of *kwins* checked.	Average.	
1	2	3	4	5	6	7
Akyab	1,152	63	7	502	72	553
Kyaukpyu	792	86	4	324	81	410
Sandoway	291	66	3	205	68	209
Hanthawaddy	1,666	97	9	783	87	801
Pegu	1,333	60	9	662	74	690
Tharrawaddy	597	100	5	552	110	557
Prome	1,026	113	5	682	136	709
Ma-ubin	591	106	5	454	91	560
Pyapôn	839	103	6	501	84	554
Bassein	1,290	81	8	612	77	633
Henzada	849	100	6	623	104	707
Myaungmya	1,067	94	6	618	103	655
Toungoo	768	97	5	461	92	484
Thatôn	1,606	86	6	586	98	620
Amherst	996	70	5	477	95	503
Tavoy	517	55	3	314	105	360
Mergui	642	65	3	212	71	277
Thayetmyo	377	31	2	216	108	209
Pakôkku	*271*	*55*	*4*	*125*	*31*	*180*
Minbu	846	114	5	594	119	690
Magwe	2,264	86	8	1,028	129	1,028
Mandalay	749	†93	5	643	129	523
Katha	1,951	75	5	521	104	596
Shwebo	3,639	109	12	1,081	90	1,167
Sagaing	1,169	128	8	1,107	138	1,122
Lower Chindwin	1,606	104	6	747	125	851
Upper Chindwin	188	93	1	108	108	114
Kyauksè	640	152	6	544	91	696
Meiktila	1,988	72	5	719	144	791
Yamèthin	1,886	207	5	679	136	702
Myingyan	2,831	168	8	1,164	146	1,332
Total for 1908-09 ...	36,156	2,874	171	17,719	104	19,103
Total for 1907-08 ...	35,610*	2,729	169	17,782	105	19,100

* Revised figures. † Excludes

NOTE :—The totals exclude

Inspections of Kwins (Paragraph 18).

THE FIELD WORK WAS TESTED.										
Difference in revenue due to corrections.		By District Officers.								Remarks.
		Commissioners.	*Subdivisional Officers.*			*Township Officers.*			Total.	
Total increase.	Total decrease.	Deputy	Number of Subdivisional Officers.	Number of *kwins* checked.	Average.	Number of Township Officers.	Number of *kwins* checked.	Average.		
8	9	10	11	12	13	14	15	16	17	18
Rs.	Rs.									
695	97	5	4	69	17	9	95	11	164	
521	22	...	1	7	7	5	24	5	31	
22	3	2	...	...	...	3	59	20	60	
3,424	1,750	...	3	14	5	8	69	9	83	
848	134	3	3	73	24	6	92	15	168	
181	38	16	2	37	19	6	51	9	104	
232	6	8	3	30	10	7	58	8	96	
739	162	...	2	6	3	4	28	7	34	
1,132	358	6	...	...	...	...	...	...	6	
1,432	108	6	2	5	3	6	14	2	25	
759	86	4	2	11	6	6	32	5	47	
1,491	157	2	2	2	1	4	7	2	11	
310	114	...	3	17	6	7	59	8	71	
32	...	...	3	30	10	6	34	6	62	
1,104	39	...	3	1	...	7	56	8	57	
54	...	2	...	...	...	4	27	7	29	
181	4	6	2	6	3	4	20	5	32	
237	257	5	2	10	5	4	21	5	36	
1,210	*312*	...	*2*	*2*	*1*	*3*	*2*	*1*	*4*	
416	172	36	2	27	14	5	27	5	90	
277	205	...	2	13	7	6	57	10	70	
530	401	...	2	28	14	5	41	8	61	
83	171	1	3	22	7	7	3	...	26	
1,687	1,848	9	3	63	21	9	223	25	291	
479	251	48	2	158	79	6	205	34	411	
337	214	2	2	67	34	5	147	29	216	
33	43	2	1	23	23	1	22	22	42	
1,560	347	6	2	7	4	3	24	8	37	
89	284	7	4	30	8	4	73	18	110	
1,788	370	14	2	43	22	5	124	25	175	
709	449	3	2	45	23	6	71	12	119	
21,382	8,090	193	64	844	13	158	1,763	11	2,764	
18,444	9,258	157	66	634	10	161	1,325	8	2,067	

34 *kwins* checked in tract under Revision Survey.
figures against Pakôkku.

STATEMENT X.—*Errors discovered by Inspecting Officers* (Paragraph 18).

District.	By District Officers.			By Superintendent.			By Inspectors.		
	Total number of holdings visited.	Number of holdings found incorrect.	Percentage of error.	Total number of holdings visited.	Number of holdings found in correct.	Pecentage of error.	Total number of holdings visited.	Number of holdings found in correct.	Percentage of error.
1	2	3	4	5	6	7	8	9	10
Akyab ...	3,889	801	20·60	780	395	50·64	22,135	8,258	37·31
Kyaukpyu ...	1,018	149	14·64	2,355	158	6·71	14,012	1,597	11·40
Sandoway ..	1,100	251	22·82	1,269	318	25·06	4,719	1,375	29·14
Hanthawaddy ...	979	255	26·05	1,045	439	42·01	11,658	2,547	21·85
Pegu ...	2,670	982	36·78	800	260	32·50	10,627	4,223	39·74
Tharrawaddy ...	2,467	179	7·26	2,065	284	13·75	16,526	2,697	16·32
Prome ...	4,160	336	8·08	3,671	500	13·62	30,972	4,558	14·72
Ma-ubin ...	603	108	17·91	1,089	347	31·86	8,447	2,351	27·83
Pyapôn ...	...	...	...	1,003	391	38·98	7,349	2,354	32·03
Bassein ...	325	74	22·77	934	202	21·63	12,905	3,589	27·81
Henzada ...	1,242	333	26·81	1,940	246	12·68	20,781	5,600	26·94
Myaungmya ...	96	25	26·04	1,931	685	35·47	10,536	4,341	41·20
Toungoo ...	1,612	252	15·63	1,797	636	35·39	9,844	3,000	30·48
Thatôn ...	1,419	331	23·33	1,083	476	43·95	9,397	2,606	27·73
Amherst ...	1,836	322	17·54	903	363	40·20	12,991	4,953	38·13
Tavoy ...	595	302	50·76	997	113	11·33	7,263	1,278	17·59
Mergui ...	769	85	11·05	1,077	358	33·24	5,715	2,827	49·47
Thayetmyo ...	757	89	11·76	960	149	15·52	8,877	1,512	17·03
Minbu ...	3,558	555	15·60	3,621	574	15·85	28,950	2,428	8·39
Magwe ...	2,775	246	8·86	2,242	104	4·64	39,583	2,639	6·67
Mandalay ...	2,152	168	7·81	1,496	101	6·75	15,629	2,115	13·53
Katha ...	399	76	19·05	520	217	41·73	7,036	1,997	28·38
Shwebo ...	9,209	1,314	14·27	1,987	337	16·96	27,561	3,763	13·65
Sagaing ...	13,236	470	3·55	4,037	397	9·83	40,668	2,150	5·29
Lower Chindwin ...	9,080	1,362	15·00	4,766	510	10·80	42,731	3,179	7·44
Upper Chindwin ...	1,012	105	10·38	2,388	462	19·35	3,177	530	16·68
Kyauksè ...	921	3	·33	3,661	16	·44	25,756	167	·65
Meiktila ...	3,782	906	23·96	1,642	167	10·17	24,248	1,651	6·81
Yamèthin ...	3,700	851	23·00	4,792	1,112	23·21	13,107	5,067	38·66
Myingyan ...	2,998	339	11·31	3,934	684	17·39	34,279	6,432	18·76
Total ...	78,359	11,269	14·38	60,785	11,001	18·10	527,479	91,784	17·40

STATEMENT XI.—*Details of errors discovered in course of inspections by Land Records Staff.*
(Paragraph 18).

District.	In Survey.			Fallow.		Classification and rates.		Statistical Errors.		Remarks.
	Number checked.	*Errors of*		Number checked.	Errors.	Number checked.	Found incorrect.	Number of holdings checked.	Total statistical errors.	
		Half an acre and over.	Under half an acre.							
1	2	3	4	5	6	7	8	9	10	11
Akyab	1,584	81	710	57,274	4,218	2,801	151	421,641	12,281	
Kyaukpyu ...	833	131	164	4,871	1,493	2,427	14	16,367	1,465	
Sandoway ...	536	7	203	4,626	1,000	29	14	5,988	1,500	
Hanthawaddy ...	1,396	92	513	81,019	1,617	12,008	68	12,703	6,920	
Pegu	1,200	111	468	6,442	1,493	380	13	10,627	4,948	
Tharrawaddy ...	666	37	145	64,095	712	16,526	7	18,591	3,245	
Prome	1,199	33	365	7,355	1,431	3,020	116	34,643	6,333	
Ma-ubin	477	148	113	5,477	1,048	8,840	312	9,536	6,438	
Pyapôn	1,101	246	384	4,236	1,443	7,611	22	8,354	1,354	
Bassein	2,436	584	755	25,336	1,419	2,522	56	13,839	3,490	
Henzada	856	100	470	3,916	1,693	197	133	22,721	7,096	
Myaungmya ...	1,518	278	654	24,974	3,131	6,463	33	12,467	16,781	
Toungoo	1,203	99	194	6,570	1,241	1,425	21	11,641	4,084	
Thatôn	762	106	199	2,679	859	962	7	10,679	5,671	
Amherst	835	190	185	4,752	1,627	105	10	13,894	8,818	
Tavoy	84	25	47	1,357	467	3,367	44	8,832	2,354	
Mergui	304	46	84	2,445	618	3,727	7	4,661	2,104	
Thayetmyo ...	255	23	88	5,803	680	9,837	22	9,837	1,971	
Minbu	514	67	185	85,158	1,075	28,950	6	28,950	1,429	
Magwe	2,376	176	476	43,250	995	5,700	4	40,383	2,711	
Mandalay ...	1,947	206	128	60,505	722	17,125	31	17,125	2,020	
Katha	929	64	393	24,860	1,776	657	1	37,556	2,708	
Shwebo	3,358	125	159	10	5	...	...	37,041	3,316	
Sagaing	374	143	76	99,353	944	44,703	...	44,703	2,372	
Lower Chindwin ...	1,335	64	114	115,199	1,226	103	...	47,497	1,833	
Upper Chindwin ...	681	69	165	45,663	328	...	...	7,039	403	
Kyauksè ...	404	115	226	161,755	1,381	28,152	65	29,426	2,479	
Meiktila	10	8	2	106,067	584	4,107	680	25,890	814	
Yamèthin	5,611	965	748	132,234	1,748	17,899	156	17,899	4,628	
Myingyan ...	1,134	151	329	143,538	2,552	38,213	13	38,213	5,407	
Total ...	35,918	4,490	8,742	1,330,819	39,526	267,856	2,006	1,008,743	126,973	

STATEMENT No. XII.—*Survey*

Station in which school is established.	Average number of pupils on the rolls in each month.	Number of days the school was in session.	Average number of days each pupil received tuition.	Number of pupils on the rolls on the 31st March.			Total income.
				Pupils paying fees.	Free pupils.	Total.	
1	2	3	4	5	6	7	8
							Rs.
Akyab	20	252	211	22	..	22	252
Kyaukpyu	22	226	230	20	3	23	261
Insein	20	261	195	20	3	23	426
Pegu	19	272	230	13	4	17	399
Prome	15	276	252	...	13	13	4
Ma-ubin	14	274	276	14	...	14	377
Bassein	15	275	257	16	2	18	369
Henzada	21	262	208	23	2	25	486
Toungoo	12	256	222	11	...	11	313
Moulmein	28	251	236	28	2	30	737
Mergui	15	209	153	11	...	11	314
Pakôkku	28	264	249	4	25	29	79
Minbu	30	268	266	6	25	31	89
Mandalay	13	275	253	11	...	11	192
Katha	16	257	203	8	8	16	133
Sagaing	29	255	233	8	21	29	185
Mônywa	12	261	236	2	7	9	77
Meiktila	32	276	219	11	20	31	268
Yamèthin	22	264	246	16	2	18	236
Total for 1908-09 ...	383	260	230	244	137	381	5,197
Total for 1907-08 ...	368	267	239	249	125	374	5,231

G. B. C. P. O.—No. 115, C. S. & L. R. 1 (*a*), 25-9-1909—278—J. A. P.

Schools (Paragraph 19).

Expenditure.					Number of pupils who passed the last examination in			Remarks.
On establishment.	On scholarships.	On prizes.	On contingencies.	Total.	Surveying.	Arithmetic.	Revenue Law.	
9	10	11	12	13	14	15	16	17
Rs.	Rs.	Rs.	Rs.	Rs.				
1,104	482	28	418	2,032	10	6	11	
1,139	755	28	267	2,189	11	1	6	
942	542	28	258	1,770	12	5	11	
1,232	960	24	98	2,314	8	3	7	
1,104	914	18	314	2,350	9	2	7	
1,101	930	16	199	2,246	8	5	12	
1,128	951	20	460	2,559	10	2	14	
1,104	505	28	8	1,645	14	7	15	
1,140	455	16	110	1,721	3	1	6	
834	1,088	36	727	2,685	18	17	16	
574	486	18	603	1,681	...	2	4	
936	1,002	34	176	2,148	27	11	20	
1,106	1,169	38	271	2,584	29	14	24	
880	602	14	102	1,598	11	8	6	
1,015	794	24	91	1,924	4	...	1	
1,168	961	34	226	2,389	20	9	19	
1,104	535	14	98	1,751	5	4	4	
1,064	1,236	38	114	2,452	11	4	16	
875	733	24	262	1,894	11	3	9	
19,550	15,100	480	4,802	39,932	221	104	208	
19,497	14,907	480	4,562	39,446	209	92	229	

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